Supreme Court, U. S.
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APPENDIX

IN THE

Supreme Court of the United States

OCTOBER TERM, 1974

No. 74-450

ALEXANDER P. BUTTERFIELD, Administrator of the Federal Aviation Administration, *et al.*,
Petitioners,

—v.—

REUBEN B. ROBERTSON, III and JEROME B. SIMANDLE

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF COLUMBIA CIRCUIT

PETITION FOR A WRIT OF CERTIORARI FILED OCTOBER 16, 1974
CERTIORARI GRANTED DECEMBER 16, 1974

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RELEVANT DOCKET ENTRIES

PARTIES

REUBEN B. ROBERTSON, III
JEROME B. SIMANDLE

v.

1. JOHN H. SHAFFER, Administrator
   Federal Aviation Administration
2. FEDERAL AVIATION ADMINISTRATION
3. AIR TRANSPORT ASSOCIATION OF AMERICA
4. JOHN A. VOLPE, Secretary,
   Department of Transportation
5. DEPARTMENT OF TRANSPORTATION

1971	Sep. 30	Complaint, appearance; jury demand
1972	Jan. 31	Amended complaint
	Feb. 2	Motion of deft. #3 to dismiss and alternative motion to strike
	Feb. 9	Motion of pltffs. for preliminary injunction
	Feb. 14	Answer of defts. #1, 2, 4 and 5 to amended complaint
	Feb. 28	Opposition of pltff's to motion to dismiss and alternative motion to strike of deft.#3
	Feb. 29	Order extending time to March 10, 1972 to defts. to respond to motion for prel. inj. conditioned that defts. do not implement policy in letter dated Jan. 11, 1972; hearing on motion for prel. inj. continued to March 17, 1972 at 10:00 a.m. (N) (Signed 2-28-72) Waddy J.
	Mar. 15	Order extending time to April 10, 1972 to defts to respond to pltf motion for preliminary injunction with conditions hearing

on motion for preliminary injunction is continued from 3-17-72. (N) Waddy, J

Mar. 27 Order granting motion of deft. Air Transport Association of America to dismiss. (N) Waddy J.

Apr. 26 Withdrawal of pltfs. motion for preliminary injunction;

Apr. 26 Motion of pltfs. for partial summary judgment; exhibit 1 through 4;

May 19 Request of plaintiffs for admissions; exhibit 1 through 9

May 19 Interrogatories of pltfs. to defts.

May 19 Request of pltfs. for production of documents

June 1 Federal defendants cross-motion for & partial summary judgment and opposition to plaintiffs motion for partial summary judgment; affidavit of John H. Shaffer with attachments 1, 2 & 3; affidavit of John H. Shaffer with attachments 1, 2, 3, 4, 5, 6 & 7; exhibits A, B & C

June 21 Motion of Federal defendants for a protective order & stay discovery

June 29 Motion of plaintiffs to discover & opposition to defendants motion for a protective order staying discovery

Jul. 7 Response of defts to motion to compell discovery; affidavits

Jul. 12 Response of Federal defendants to plaintiffs statement of material facts as to which there is no genuine exhibit

Jul. 12 Reply memorandum by Federal Defendants affidavit (1)

Jul. 21 Recommendation granting motion for a protective order and to stay discovery; Assistant Pretrial Examiner

Jul. 26 Objections of plaintiffs to recommendation of pretrial examiner

Aug. 2 Reply of defendant to objections to pretrial examiners recommendations

Aug. 21 Motion of Federal defendants to dismiss or for summary judgment; affidavit;

Aug. 29 Supplemental request of pltfs for production of documents

Sep. 28 Response of Federal defendants to plaintiffs supplemental request for production of documents

Nov. 8 Order granting summary judgment as to count 1 & dismissing remaining counts. (N) Waddy J.

Nov. 27 Order staying to & including 12-12-72 order of 11-8-72 re SWAP reports; further stayed should federal defendants file a motion for further stay in USCA. (N) Waddy J.

Dec. 12 Notice of appeal by defendants from order of 11-8-72

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

Civil Action No. 1970-71

REUBEN B. ROBERTSON, III
2234 Decatur Place, N.W.
Washington, D.C. 20009
202-833-3400

and

JEROME B. SIMANDLE
19 Agassiz Street
Cambridge, Massachusetts 02140
617-547-8235

against

JOHN H. SHAFFER
Administrator
Federal Aviation Administration
800 Independence Avenue, S.W.
Washington, D.C. 20590
202-655-4000

FEDERAL AVIATION ADMINISTRATION
800 Independence Avenue, S.W.
Washington, D.C. 20590
202-655-4000

AIR TRANSPORTATION ASSOCIATION OF AMERICA
1000 Connecticut Avenue, N.W.
Washington, D.C.
202-296-5800

JOHN A. VOLPE
Secretary
Department of Transportation
400 - 7th Street, S.W.
Washington, D.C. 20590
202-655-4000

DEPARTMENT OF TRANSPORTATION
400 - 7th Street, S.W.
Washington, D.C. 20590
202-655-4000

COMPLAINT

(Seeking orders under the Freedom of Information Act, injunctive relief for continuing *ultra vires* agency actions, and injunctive and treble damage relief for violations of the antitrust laws)

JURISDICTION AND VENUE

1. Plaintiff Reuben B. Robertson, III is a citizen of the United States residing at 2234 Decatur Place, N.W., Washington, District of Columbia, and is a person within the meaning of 5 U.S.C. 552 and 551(2).

2. Plaintiff Jerome B. Simandle is a citizen of the United States residing at 19 Agassiz Street, Cambridge, Massachusetts, and is a person within the meaning of 5 U.S.C. 552 and 551(2).

3. Defendant Federal Aviation Administration [hereinafter FAA] is an agency of the United States government within the meaning of 5 U.S.C 552 and 551(1). Defendant FAA is a subdivision of the Defendant Department of Transportation and has its main offices in the District of Columbia.

4. Defendant John H. Shaffer is Administrator of the Defendant FAA. As Administrator he has ultimate responsibility for and control of the policies of Defendant FAA.

5. Upon information and belief, Defendant Air Transport Association of America [hereinafter ATA] is an unincorporated association of air carriers having its principal place of business in the District of Columbia.

6. Defendant Department of Transportation [hereinafter DOT] is an agency of the United States government within the meaning of 5 U.S.C. 552 and 551(1). Defendant Department of Transportation has its main offices in the District of Columbia.

7. Defendant John A. Volpe is Secretary of Defendant DOT. As Secretary he has ultimate responsibility for and control of the policies of Defendant DOT.

8. The agency records sought to be produced under those counts of this complaint relating to the Freedom of Information Act, 5 U.S.C. 552, are maintained by and under the custody of the Defendant FAA and are located in the District of Columbia.

9. Plaintiffs invoke jurisdiction of this court pursuant to the provisions of 5 U.S.C. 552, 5 U.S.C. 702, and 15 U.S.C. 4. Venue is proper under the provisions of 28 U.S.C. 1361 and 1391(b) and 5 U.S.C. 703.

COUNT I

(Orders for disclosure under the Freedom of Information Act)

10. During the months of July and August, 1970, in connection with a study of airline safety being conducted by plaintiff Simandle and others under the supervision of plaintiff Robertson, both plaintiffs and their agents and associates made repeated requests to Defendant FAA and its agents for the production of certain documents, known as Mechanical Reliability Reports [hereinafter MRRs] and Systemworthiness Analysis Program Reports [hereinafter SWAP Reports]. Such requests were made orally to agents of Defendant FAA on or about July 27, July 29, and August 5, 1970, with respect to the MRRs, and by letter of August 6, 1970, with respect to the SWAP Reports.

11. Defendant FAA, acting through its agents, refused to produce any of the above documents, formally denying plaintiffs' requests by letters dated September 28, 1970 in the case of the MRRs, and August 19, August 21, and September 28, 1970 in the case of the SWAP Reports.

12. Plaintiffs, in accordance with the procedures adopted by Defendant FAA, filed timely notice of administrative appeal, by letters dated August 26, 1970 in the case of the SWAP Reports, and October 27, 1970 in the case of the MRRs.

13. Defendant FAA, acting through its agents, formally denied plaintiffs' appeals by letters of February 24, 1971 in the case of the SWAP Reports, and April 1, 1971, in the case of the MRRs.

14. Plaintiffs have still not been allowed to inspect and copy the MRRs and SWAP Reports pursuant to their requests, all in violation of the Freedom of Information Act, 5 U.S.C. 552, which provides that such information shall be public and as such available for inspection and copying.

COUNT II

(Injunctive relief requiring the FAA to institute and follow reasonable procedures for the disclosure of agency records sought under the Freedom of Information Act)

15. Plaintiffs hereby reallege each and every allegation of paragraphs 1 through 14 above.

16. Defendant FAA and its agents, including Defendant Shaffer, are subject to and required to follow the Regulations of Defendant DOT entitled "Regulations of the Office of the Secretary: Public Availability of Information," 32 F.R. 9284, codified at 49 CFR Part 7.

17. Appendix C. paragraph 5, of the Regulations described in paragraph 16 above provides that requests for reconsideration of determinations not to disclose records and appeals from failures to disclose records shall be made to the Director, Information Services, of Defendant FAA, insofar as the requests concern records under the jurisdiction of the Defendant FAA. It is further provided that the decision of said Director is administratively final.

18. No officer with the title "Director, Information Services," as specified in paragraph 17 above exists within the Defendant FAA.

19. In place of such authorized officer as described in paragraph 17 above, Defendant FAA and its agents have substituted, without authorization according to law, an agent called "Director of Public Affairs." Said Director of Public Affairs, having assumed the functions of the

Director, Information Services, purports to decide requests for reconsiderations of determinations not be disclose records according to the authority granted the latter.

20. Upon information and belief, Defendant FAA and its agents, including the Director of Public Affairs, ignore and refuse to follow the procedures for decision-making in public information cases as provided in section 7.71 and Appendix C, paragraph 5, of the Regulations described in paragraph 16 above, and such decisions are made as a result of policy determinations made by Defendant Shaffer, sometimes before those seeking reconsideration have even filed their request for reconsideration and without consulting the memorandum in support required by section 7.71(c) of the regulations described in paragraph 16 above.

21. Defendant Shaffer, the chief policy-making officer of Defendant FAA, held a press conference on or about August 23, 1970, in which he stated publicly, *inter alia*, that he would refuse to allow inspection of MRRs because such inspection would be counter-productive."

22. Plaintiffs were at that time involved in seeking access to the MRRs discussed by Defendant Shaffer in the press conference described in paragraph 21 above, as set forth in paragraphs 10 through 13 above, and Defendant Shaffer's actions were intended to and did assure that plaintiffs requests were prejudged and determined without respect to their merits and without following the procedures described in paragraphs 16 and 20 above.

23. Defendant Shaffer, in response to a request from the Defendant ATA made on December 4, 1970, signed a "determination" dated February 18, 1971, that none of the SWAP materials would be made public.

24. Plaintiffs were at that time involved in seeking access to the SWAP Reports covered under Defendant Shaffer's "determination" described in paragraph 23 above, as set forth in paragraphs 10 through 13 above, and Defendant Shaffer's actions were intended to and did assure that plaintiffs' requests were prejudged and determined without respect to their merits and without

following the procedures described in paragraphs 16 and 20 above.

25. Defendant FAA has further a policy of discouraging plaintiffs and other members of the public from seeking access to information under the Freedom of Information Act. 5 U.S.C. 552, by taking inordinate and unreasonable amounts of time to process requests, notwithstanding that section 7.3 of the Regulations described in paragraph 16 above specifically provides that action should be taken "promptly." Thus, despite the fact that Defendant Shaffer made public pronouncement in August, 1970 that plaintiffs' requests for the MRRs would not be honored, plaintiffs were not officially informed of the rejection of their request until April, 1971, eight months after their request was made. Similarly, despite the fact that Defendant Shaffer signed a determination which had the effect of denying plaintiffs' request for the SWAPs in February 1971, plaintiffs were not officially informed of the denial of their request until March, 1971, seven and a half months after their request was made.

COUNT III

(Relief against violation of the Administrative Procedure Act)

26. Plaintiffs hereby reallege each and every allegation of paragraphs 1 through 25 above.

27. The actions of Defendant Shaffer described in paragraph 23 above with respect to the SWAPs constituted rulemaking within the meaning of the provisions of the Administrative Procedure Act, 5 U.S.C. 553 and 551(4) and (5).

28. Such rulemaking occurred without notice to interested parties, including plaintiffs, and without allowing the opportunity to such parties to participate through the submission of data, views or arguments, all in violation of the Administrative Procedure Act, 5 U.S.C. 553 (b), (c), (d) and (e).

COUNT IV

(Injunctive relief against *ultra vires* agency regulations)

29. Plaintiffs hereby reallege each and every allegation of paragraphs 1 through 28 above.

30. Defendant DOT has promulgated Regulations on Public Availability of Information, described in paragraph 16 above, "implementing" the Freedom of Information Act, 5 U.S.C. 552, which are followed by both Defendants and DOT and FAA.

31. Section 7.3 of these regulations, entitled "policy" and which is to form the ultimate basis for decision of disclosure requests provides, *inter alia*, that documents otherwise required to be made available under the Freedom of Information Act shall not be disclosed where secrecy will aid "the efficient conduct of public business."

32. Such a policy is entirely inconsistent with the fundamental policies of the Freedom of Information Act, and the promulgation of regulations including the language quoted in paragraph 31 above and based upon such a policy is entirely without statutory authority and is therefore completely *ultra vires*.

33. Defendant FAA has adopted its own guidelines based upon and "implementing" the Regulations described in paragraph 16 above. These guidelines are set forth in FAA Handbook 1200.2, Public Availability of Information, and "state basic policies and instructions governing the disclosure of FAA records to the public."

34. Chapter 1, section 1, of the FAA Handbook described in paragraph 33 above, entitled "policy," and which is to form the ultimate basis for decision of disclosure requests provides, *inter alia*, that documents otherwise available under the Freedom of Information Act shall not be disclosed where secrecy will aid "the efficient conduct of public business."

35. Such a policy is inconsistent with the fundamental policies of the Freedom of Information Act and the promulgation of guidelines including the language quoted in paragraph 34 above and based upon such a policy, is

entirely without statutory authority and is therefore completely *ultra vires*.

36. Section 7.85(b) of the Regulations promulgated by Defendant DOT and described in paragraph 16 above, which is followed by Defendant FAA, set forth, *inter alia*, a charge of fifty cents per page for the photocopying of public documents, with a minimum charge of one dollar.

37. The charges adopted as specified in paragraph 36 above bear no relation to the cost of photostatic reproductions, since the Defendant FAA makes similar photostat copying facilities available for the use of members of its staff doing private work for ten cents per page and the private firms doing similar photostat copying work in the Washington, D.C. area charge four to six cents per page.

38. The charges for photostatic reproduction set forth in section 7.85(b) of Defendant DOT's Regulations and described in paragraph 36 above, by virtue of their exorbitant cost, have the effect of discouraging members of the public from taking advantage of their right to copy public documents and are therefore entirely inconsistent with the fundamental policies of the Freedom of Information Act, 5 U.S.C. 552. The promulgation of such regulations is entirely without statutory authority and is completely *ultra vires*.

COUNT V

(Injunctive relief against purposeful misinterpretation of regulations)

39. Plaintiffs hereby reallege each and every allegation of paragraphs 1 through 38.

40. Defendant FAA and its agents have purposefully misinterpreted those parts of section 7.85 of Defendant DOT's Regulations, described in paragraph 16 above, pertaining to charges for copying and searches in order, by the charging of unauthorized fees, to discourage plaintiffs, their agents and associates, and other members of the public, from exercising their rights to gain access

to and inspect documents within the scope of the Freedom of Information Act, 5 U.S.C. 552.

41. Plaintiffs' agents were, during the months of July and August, 1970, required by the defendant FAA and its agents to pay "search fees," according to section 7.85 (a) of the DOT regulations described in paragraph 16 above, for information which was within the immediate knowledge of Defendant FAA's answering agents for which no search within the meaning of section 7.85(a) was required.

42. Defendant FAA, acting through its agents, attempted during the months of July and August, 1970 to require plaintiffs' agents to pay copying fees under section 7.85(b) before allowing examination of public documents, despite the fact that plaintiffs' agents did not wish to copy these documents but merely to inspect them as is their right under the Freedom of Information Act, 5 U.S.C. 552, and despite the fact section 7.85(b) does not and cannot authorize the imposition of fees for the mere inspection of available documents.

COUNT VI

(Injunctive relief against harassment of plaintiffs and their agents)

43. Plaintiffs hereby reallege each and every allegation of paragraphs 1 through 42.

44. During July and August, 1970, plaintiffs were involved in a study described in paragraph 10 above and Defendant FAA and its agents, knowing full well that public information in their possession was necessary to any meaningful investigation of the problems under consideration by plaintiffs, and knowing full well that due to the short period of availability of most of the students working on said study time was of the essence, caused certain of the agents of Defendant FAA, including Defendant Shaffer, to meet together or otherwise communicate on a number of occasions specifically to plan their conduct in order to frustrate as completely as possible plaintiffs' investigation.

45. On information and belief, Defendant ATA and its agents urged Defendant FAA and its agents not to cooperate with the study described in paragraph 10 above and not to provide access to plaintiffs and their agents to information to which they were and are lawfully entitled, and agents of Defendant ATA met with or contacted agents of Defendant FAA, while information requests of plaintiffs and their agents were pending, specifically to make such requests and to plan their conduct in order to prevent such access to requested information.

46. In pursuance of the conspiracy among the agents of Defendant FAA to prevent plaintiffs and their agents from gaining access to materials to which they were and are lawfully entitled, said agents of Defendant FAA attempted to and did harrass plaintiffs and their agents, refusing to provide relevant and legally public materials for inspection, attempting to impose unreasonable charges and fees, and following a policy of obstructive noncooperation, including yelling at and berating plaintiffs' agents and falsely accusing plaintiffs' agents of misconduct.

47. Defendant FAA and its agents, in pursuance of their policy of obstructive non-cooperation, specifically told plaintiffs agents that under no circumstances would plaintiffs' agents receive the cooperation of Defendant FAA or any of its agents, and Defendant FAA and its agents have continued to pursue their stated policy of non-cooperation with plaintiffs' legitimate investigations.

48. As a consequence of the policies and practices of defendant FAA and its agents described in paragraphs 44 through 48 above, plaintiffs have in fact been thwarted in their study and investigations and have not been able to complete such study, and are aggrieved thereby.

COUNT VII

(Injunctive relief and damages for violations of the antitrust laws)

49. Plaintiffs hereby reallege each and every allegation of paragraphs 1 through 48.

50. Defendant FAA has distributed and does distribute the MRRs described in paragraph 10 above to Defendant ATA and certain of its members.

51. Agents of Defendant FAA have informed plaintiffs' agents that distribution of these MRRs is made at the request of Defendant ATA and its members and that distribution of MRRs to members of the public is made only with the concurrence of Defendant ATA. When plaintiffs' agents attempted to inspect copies of MRRs on file with Defendant FAA, agents of Defendant FAA requested plaintiffs' agents to seek permission from Defendant ATA.

52. Information contained in SWAP Reports has been and is provided by Defendant FAA to Defendant ATA, to air carriers which are members of Defendant ATA, and their agents, and has been and is exchanged among members of Defendant ATA.

53. The MRRs, which involve material that the air carrier members of Defendant ATA are required by law to submit to Defendant FAA, and the SWAP Reports, which are based on information obtained by agents of Defendant FAA during the course of periodic inspections of records and facilities of air carriers required by law, contain information from various competing air carriers. Such information pertains to the safety record of each of the involved air carriers and various types of aircraft and is not only of great importance to the public safety but is of the nature to materially affect the competition between the various air carriers and between the various aircraft manufacturers.

54. Defendant FAA and its agents and the Defendant ATA and its agents and members have agreed to suppress the distribution of such competitive information and to prevent its distribution to plaintiffs and other members of the public. Such agreement is designed to and has eliminated competition between air carriers for improved safety records and amounts to a conspiracy in restraint of trade, in violation of the provisions of the Sherman Act, 15 U.S.C. 1.

55. Defendant FAA has contended and does contend that the material involved in the MRRs and SWAP Reports is not public information but, on the contrary, is the private "proprietary" information of each of the various aircarriers, who submit it or who submit to inspections from which it is developed.

56. Distribution to competing aircarriers and aircraft manufacturers by agreement between the Defendant FAA and the Defendant ATA and certain of its members, of material such as that described by paragraph 53 above amounts to a conspiracy in restraint of trade, in violation of the provisions of the Sherman Act, 15 U.S.C. 1.

WHEREFORE, plaintiffs seek judgment against defendants:

(1) For Count I, an order requiring Defendant FAA to grant plaintiffs and their agents immediate access to the MRRs and SWAP Reports in question and an injunction requiring Defendant FAA to hereafter treat all SWAP Reports and MRRs as public information within the meaning of the Freedom of Information Act, 5 U.S.C. 552.

(2) For Count II, an injunction requiring the Defendant FAA to institute and follow reasonable procedures for making available agency records and information requested under the Freedom of Information Act and for administrative appeals of initial agency denials of such records and information; such an injunction would require Defendant Shaffer and his successors to cease prejudging requests for information and to cease interfering in the administrative appeal process set forth in the regulations, except insofar as the new procedures grant to the Administrator of Defendant FAA a specific role in such appellate process, and would require that the final appellate decision on a request for information under the Freedom of Information Act, 5 U.S.C. 552, be made in all cases within no more than 30 days of receipt by Defendant FAA of a formal letter of appeal or of a request for reconsideration of an initial denial of information.

(3) For Count III, an injunction prohibiting enforcement of Defendant Shaffer's "determination" of Febru-

ary 18, 1971, and forbiding Defendant FAA and Defendant Shaffer and his successors from making any further "determinations" except according to the procedures authorized by the Administrative Procedure Act.

(4) For Count IV, a judgment declaring null and void those portions of section 7.3 of Defendant DOT's regulations described in paragraphs 16 and 31 and of Chapter 1, Section 1 of Defendant FAA's Handbook described in paragraphs 33 and 34 which provide for nondisclosure of Freedom of Information Act information "for the efficient conduct of public business" and declaring null and void the fee schedule for photostatic copies set forth in section 7.85(b) of the above regulations of Defendant DOT; additionally, an injunction requiring Defendants DOT, Volpe, FAA, and Shaffer, to draft new regulations in conformity with such declaratory judgment and specifically requiring that any new fee schedule for photostatic copies of public documents shall require the payment of not more than the actual amount of the cost to Defendants FAA and DOT, as the case may be, per copy, except that such cost may in no event be more than ten cents per copy and that, in those instances where heretofore the Defendant FAA has distributed copies of such materials free of charge to Defendant ATA or certain of its members, no charge shall hereinafter be made to members of the public for the photostatic copying of similar materials, and in no instance may the Defendants impose a minimum charge other than that based upon the number of pages actually copied or require the copying of a minimum number of pages.

(5) For Count V, an injunction requiring Defendant FAA and its agents to cease requiring payment of excess and spurious fees and to cease requiring the payment of photostating charges before inspection of public documents is allowed; such injunction would also require Defendant FAA to notify, in writing, all persons who have been wrongfully charged fees by Defendant FAA and its agents within the past three years and to credit such wrongful charges against future charges of such persons for photostating, search fees, or other legitimate costs hereinafter accrued.

(6) For Count VI, an injunction prohibiting the Defendant FAA, Defendant Shaffer, and any other agents of Defendant FAA from conspiring or otherwise attempting to prevent plaintiffs or other members of the public from exercising their legitimate rights under the Freedom of Information Act, 5 U.S.C. 552, and prohibiting said Defendants from dealing with plaintiffs or other members of the public any differently from the manner in which they customarily deal or customarily have dealt with Defendant ATA and its agents and members.

(7) For Count VII, an injunction against Defendants FAA and ATA and their agents to prevent further conspiracies in restraint of trade and damages of thrice such loss as plaintiffs shall demonstrate resulted from the illegal conspiracies of Defendants FAA and ATA and their agents.

Plaintiffs further request that this court require Defendants FAA and DOT to display prominently, in that part of each Defendant's normal place of business or places of business to which members of the public seeking access to information of the sort involved in this complaint are admitted, a copy of the decree of this court for a period of one year from the date of the decree, that defendants be assessed all court costs and attorneys fees, and that the court order such further relief as to this court may appear just and proper.

/s/ David Bonderman
DAVID BONDERMAN
3012 Q Street, N.W.
Washington, D.C. 20007
202-337-9135
Attorney for Plaintiffs

DEMAND FOR JURY TRIAL

Plaintiffs demand trial by jury in this case for all issues pertaining to damages.

/s/ David Bonderman
Attorney for Plaintiffs

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

Civil Action No. 1970-71

REUBEN B. ROBERTSON, III, ET AL., PLAINTIFFS

v.

JOHN H. SHAFFER, ET AL., DEFENDANTS

AMENDMENT OF COMPLAINT

Plaintiffs hereby amend their complaint as of right under the provisions of Fed. R. Civ. P. 15(a) in the following respects:

(1) Paragraph 23, page 5, is amended to read:

23. Defendant Shaffer, in response to a request from the Defendant ATA made on December 4, 1970, signed a "determination" dated February 18, 1971, that none of the SWAP materials would be made public, and, upon information and belief, Defendant Shaffer signed a similar "determination" not to release MRRs submitted by ATA member air carriers on November 23, 1971, during the pendancy of this lawsuit.

(2) Paragraph 27, page 6, is amended to read:

27. Upon information and belief, on or about January 10, 1972, during the pendancy of this litigation, Defendant FAA and/or its agents or employees made a "final decision" regarding public access to MRRs and providing for the systematic destruction of original MRRs received by the FAA after February 18, 1972 and the elimination of information from the MRR summaries published by the FAA; at the same time, the Defendant FAA stated that its "determination" with respect to MRRs, described in paragraph 23 above, would be changed to comport with this new procedure.

(3) Paragraph 28, page 6, is amended to read:

28. The actions of Defendants described in paragraph 23 above with respect to the SWAPs and MRRs and in paragraph 27 above with respect to the MRRs constituted rule making within the meaning of the provisions of the Administrative Procedure Act, 5 U.S.C. 553 and 551(4) and (5), and such rulemaking occurred without notice to interested parties, including Plaintiffs, and without allowing the opportunity to such parties to participate through the submission of data, views or arguments, all in violation of the Administrative Procedure Act, 5 U.S.C. 553(b), (c), (d) and (e).

(4) Paragraph (3), page 13, is amended to read:

(3) For count III, an injunction prohibiting enforcement of Defendant Shaffer's "determinations" of February 18, 1971, and November 23, 1971, and forbidding Defendant FAA and Defendant Shaffer and his successors from making any further "determinations" except according to the procedures required by the Administrative Procedure Act; an injunction prohibiting said Defendants from effectuating the "final decision" referred to in paragraph 27 above or from taking any other action to destroy any documents involved in this litigation; and an injunction prohibiting said Defendants from taking any action to eliminate any information currently being included in the published MRR summaries.

CERTIFICATE OF SERVICE

I, James R. Michael, 1237 - 22nd Street, N.W., Washington, DC 20037, telephone (202) 785-0797, hereby certify that I have served a copy of the above amendment of complaint upon counsel of record for all Defendants this 31st day of January, 1971.

/s/ James R. Michael
JAMES R. MICHAEL

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

Civil Action No. 1970-71

REUBEN B. ROBERTSON, III, ET AL., PLAINTIFFS

v.

JOHN H. SHAFFER, ET AL., DEFENDANTS

ANSWER OF DEFENDANTS DEPARTMENT OF TRANSPORTATION, JOHN A. VOLPE, FEDERAL AVIATION ADMINISTRATION, JOHN H. SHAFFER TO AMENDED COMPLAINT

First Defense

The Court lacks jurisdiction over the subject matter.

Second Defense

The complaint fails to state a claim upon which relief can be granted.

Third Defense

Defendants John A. Volpe and John H. Shaffer are not proper parties to this action.

Fourth Defense

Answering specifically the numbered paragraphs of the complaint, these defendants admit, deny and aver as follows:

1.-2. Lack knowledge or information sufficient to form a belief.

3. Admit the allegations of the first sentence of paragraph 3. With regard to the second sentence, admit that Defendant FAA is an agency of the Defendant Department of Transportation and has its main offices in the District of Columbia.

4. Admit the allegations of the first sentence of paragraph 4. The second sentence states a legal conclusion to which no response is required.

5. Lack knowledge or information sufficient to form a belief.

6. Admit.

7. Admit the allegations of the first sentence of paragraph 7. The second sentence states a legal conclusion to which no response is required.

8. Denied, except admit that the records are maintained by and in the custody of Defendant FAA.

9. Paragraph 9 states legal conclusion to which no response is required.

Count I

10. Denied, except admit that plaintiffs made oral requests for MRRs and SWAP reports and that a letter dated August 5, 1970 requesting MRRs and a letter dated August 6, 1970 requesting SWAP reports were received; and except that these defendants lack knowledge or information sufficient to form a belief concerning the truth of the allegations regarding a study conducted by plaintiffs.

11.-13. Admit.

14. Deny.

Count II

15. These defendants respond to each and every allegation in paragraphs 1 through 14 as stated above.

16. Denied, except admit that Defendant FAA and Defendant Shaffer are subject to and required to follow the Regulations of Defendant DOT entitled "Public Availability of Information," at 49 C.F.R. Part 7.

17. Deny.

18. Denied, except admit that no officer with the title "Director, Information Services" exists within Defendant FAA.

19. Denied, except admit that there is an official with a title "Director, Office of Public Affairs," who makes reconsiderations of determinations not to disclose records in accordance with paragraph 5, Appendix C, 49 C.F.R. Part 7.

20. Deny.
21. Lack knowledge or information sufficient to form a belief.
22. Deny.
23. Admit.
24. Deny.
25. Deny.

Count III

26. These defendants respond to each and every allegation of paragraphs 1 through 25 as stated above.
27. Denied, except admit that a letter dated January 11, 1972 regarding MRRs was sent from C. W. Walker, Deputy Associate Administrator for Operations, FAA, to the Air Transport Association. The Court is referred to that letter for a full and accurate statement of its contents.
28. Deny.

Count IV

29. These defendants respond to each and every allegation of paragraphs 1 through 28 as stated above.
30. Admit.
31. Denied; the Court is referred to the regulations cited for a full and accurate statement of their contents.
32. Deny.
33. Admit.
34. Denied; the Court is referred to the handbook cited for a full and complete statement of its contents.
35. Deny.
36. Admit.
37.-38. Deny.

Count V

39. These defendants respond to each and every allegation of paragraphs 1 through 38 as stated above.
40. Deny.
41.-42. Lack knowledge or information sufficient to form a belief.

Count VI

43. These defendants respond to each and every allegation of paragraphs 1 through 42 as stated above.

44. Deny.
45. Lack knowledge or information sufficient to form a belief.
46.-48. Deny.

Count VII

49. These defendants respond to each and every allegation of paragraphs 1 through 49 as stated above.
50.-56. Deny.

/s/ _____
HAROLD H. TITUS, JR.
United States Attorney

/s/ _____
JOSEPH M. HANNON
Assistant United States Attorney

/s/ _____
NATHAN DODELL
Assistant United States Attorney

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that the foregoing Answer has been served upon plaintiffs by mailing a copy thereof to their attorney, James R. Michael, Esq., 1237 - 22nd Street, N.W. Washington, D.C. 20037, and upon co-defendant by mailing a copy thereof to its attorneys, George W. Wise, Esq., Timothy J. Bloomfield, Esq. and David B. Lytle, Esq., 815 Connecticut Avenue, Washington, D.C. 20006.
Dated: February 14, 1972

/s/ _____
NATHAN DODELL
Assistant United States Attorney

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

Civil No. 1970-71

RUEBEN B. ROBERTSON, III, ET AL., PLAINTIFFS

v.

JOHN H. SHAFFER, ET AL., DEFENDANTS

PLAINTIFFS' MOTION FOR PARTIAL SUMMARY JUDGMENT

Plaintiffs hereby move this Honorable Court, pursuant to Rule 56 of the Federal Rules of Civil Procedure, to enter an order of summary judgment in the Plaintiffs' favor under Count I of Plaintiffs' Complaint, as follows:

(1) requiring that Defendant Federal Aviation Administration ("FAA") grant Plaintiffs and their agents immediate access to all Mechanical Reliability Reports [hereinafter MRRs] and Systemworthiness Analysis Program Reports [hereinafter SWAP Reports] and;

(2) requiring that hereinafter Defendant FAA disclose all MRRs and SWAP Reports as required by the Freedom of Information Act, 5 U.S.C. 522, and make them available to the public on terms not more onerous than they are now and have been made available to Defendant Air Transport Association (ATA) and/or its members.

This judgment is sought on the ground that there is no genuine issue as to any material fact, and that Plaintiffs are entitled to such judgment as a matter of law. The motion is based upon the Plaintiffs' Complaint; the admissions in the Answer of the government Defendants regarding Count I of Plaintiffs' Complaint; the Memorandum of Points and Authorities in Support of this Motion for Partial Summary Judgment; and the Affidavit of

Plaintiff Reuben B. Robertson, III, and the attachments thereto.

Respectfully submitted,

James R. Michael
1237 - 22nd Street, N.W.
Washington, D.C. 20037
(202) 785-0797
Attorney for Plaintiffs

CERTIFICATE OF SERVICE

I hereby certify that on this 26th day of April, 1972, I served a copy of the above Motion for Summary Judgment, together with the Points and Authorities in support thereof, proposed order, and Affidavit of Reuben B. Robertson, III, upon all counsel of record in this action, by depositing copies thereof in the United States mails, postage prepaid, addressed to said counsel at their addresses of record.

UNITED STATES DISTRICT COURT FOR THE DISTRICT OF COLUMBIA

Civil Action No. 1970-71

REUBEN B. ROBERTSON, III, ET AL

v.

JOHN H. SHAFFER, ET AL

AFFIDAVIT

I, REUBEN B. ROBERTSON, III, being duly sworn on oath, depose and state as follows:

1. I am a consultant to the Center for Study of Responsive Law, Washington, D.C., and in this capacity have been responsible for conducting and directing studies of aviation safety, airline economics and operations, and the responsiveness of the Federal Aviation Administration to consumer, environmental and safety issues; I am also a founder and director of the Aviation Consumer Action Project (ACAP), which seeks to promote consumer and safety interests in aviation, and have served since November, 1970 as Chairman of the Consumer Advisory Committee to the Civil Aeronautics Board appointed by the CAB Chairman.

2. During the Summer of 1970, students working under my direction on airline safety studies requested access to various agency records maintained by the FAA concerning aviation safety and FAA surveillance of air carrier operations. The records to which we sought access included, *inter alia*, maintenance reports filed by air carriers pursuant to FAA regulations, known as Mechanical Reliability Reports ("MRRs"), and reports of FAA inspections and audits of air carrier operations and facilities, conducted pursuant to the agency's Systemworthiness Analysis Program ("SWAP"). These records were ultimately denied to us by the FAA in administratively final action, following which this litigation was

commenced. The FAA denial letters are appended to this Affidavit as Exhibits 1 and 2, respectively.

3. The MRR documents contain information that is required to be reported to the FAA concerning maintenance and safety defects and incidents experienced by commercial air carriers involving in-flight fires, fire warnings, engine shutdowns during flight, smoke and fume accumulation in the crew and passenger cabins, excessive cracks, corrosion or structural damage, fuel leakage or blockage during flight, landing gear malfunctions, and aircraft system malfunctions that require emergency actions in flight. Among other things, the information includes the name of the airline, aircraft type and registration number, the date, location and flight number of the incident reported, and the details and status of the defect, failure or malfunction.

4. From the information contained in the MRRs, it is possible to obtain current and historical trends concerning the operational safety and maintenance records of the various airlines and of the various aircraft types, which is needed for the completion of the above-mentioned studies of airline safety; in addition, it is my opinion that the MRR information is of great importance and potential utlity to consumers of air travel who are interested in maximum air safety and promoting beneficial competition among air carriers on the basis of superior safety in operation.

5. MRRs which are received from individual air carriers are compiled and published by the FAA in a daily MRR summary. The daily summaries, which include reports in both "open" and "closed" status, are furnished by the FAA to numerous air carriers, trade assocations (including the Defendant Air Transport Association), labor organizations, aircraft manufacturers and others, and are widely distributed within the aviation community. A typical MRR daily summary is attached as Exhibit 3 to this Affidavit.

6. The SWAP reports sought by plaintiffs are developed by FAA personnel in the course of regular and special visitations to the facilities of air carriers and reviews of their procedures and operations, particularly

with regard to maintenance and safety matters. It is my information and belief that the results of SWAP evaluations, which purport to identify and document specific defects and shortcomings in the safety and maintenance system of air carriers, are provided to and discussed in detail with the air carriers and are widely disseminated and discussed throughout the airline industry. Exhibit 4 attached hereto contains excerpts from a typical SWAP report of one of the major air carriers and demonstrates the nature and purposes of these reports.

/s/ Reuben B. Robertson, III
Reuben B. Robertson, III

Subscribed and sworn to before me this 24th day of April, 1972.

/s/ Connie Jo Smith
Notary Public

My Commission Expires:
January 14, 1977

EXHIBIT 2

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

Washington, D.C. 20590

24 February 1971 [SEAL]

Mr. Jerome B. Simandle
Center for Study of Responsive Law
1908 Que Street, N.W.
Washington, D.C. 20009

Dear Mr. Simandle:

This is in reply to your letter of 26 August 1970 applying for reconsideration, pursuant to Section 7.71 of Part 7 of the Department of Transportation Regulations (32 F.R. 9284), of an initial denial by the Deputy Associate Administrator for Operations of your request for you and your colleagues to "examine and/or copy the final SWAP Reports from the past year (1969) involving the 26 major air carriers." The Flight Standards Systemsworthiness Analysis Program (SWAP) represents a systems approach to the conduct of agency responsibilities for inspection and surveillance of commercial aviation operators.

Pursuant to paragraph 5, Appendix C of Part 7, have reviewed the requested documents. It is my determination that the requested SWAP Reports are exempt from public disclosure under the provisions of the Public Information Act (5 U.S.C. 552). The reports are exempt from public disclosure under 552(b)(3) of Title 5 of the United States Code. This paragraph provides for the exemption of matters that are specifically exempted from disclosure by statute and has been implemented by Section 7.57 of Part 7, as amended, of the Department of Transportation Regulations. Paragraph 8 of Section 7.57, as amended, exempts matters under "Section 1104 of the Federal Aviation Act of 1958 (49 U.S.C. 1504) relating to the withholding, upon requests, of information

obtained under that Act." The Administrator has determined that the SWAP Reports you have requested should be withheld from public disclosure.

It is my further determination that the requested SWAP Reports are intra-agency memoranda and should be withheld from public disclosure, consistent with the exemption contained in the Public Information Act, 5 U.S.C. 552 (b) (5), as implemented by Section 7.61 of Part 7 of the Department of Transportation Regulations. Section 7.61 provides in pertinent part:

> (a) Any record prepared by a Government officer or employee (including those prepared by a consultant or advisory board) for internal Government use is within the statutory exemption to the extent that it contains—
>
> (1) Opinions, advise, deliberations, or recommendations made in the course of developing official action by the Government; * * *
>
> (b) This section has two distinct purposes. One is to protect the full and frank exchange of ideas, views and opinions necessary for the efficient functioning of the Government. This judicially recognized privilege of protection against disclosure in litigation or elsewhere is intended to assure that these resources will be fully and readily available to those officials upon whom the responsibility rests to take official and final Department action. * * *

In addition, the requested reports are investigatory files compiled for law enforcement purposes by the Federal Aviation Administration and are exempt from public disclosure under the Public Information Act, 5 U.S.C. 552(b) (7).

Section 7.65 of Part 7 of the Department of Transportation Regulations, implementing § 552(b) (7) of the Public Information Act, reads in pertinent part:

> (a) Files compiled by the Department for law enforcement purposes, including the enforcement

> of the regulations of the Department, are within the statutory exemption, except to the extent available by law to a private party.
>
> (b) The purpose of this section is to protect from disclosure the law enforcement files of the Department, including files prepared in connection with related litigation and adjudicative proceedings. It includes the enforcement not only of criminal statutes but all kinds of laws. It is also the purpose of this section to preserve the position of the Government in litigation or potential litigation, in accordance with the rules governing discovery in cases before courts and administrative agencies. * * *

Examination of the SWAP Reports also indicates that much of the material contained therein is voluntarily submitted in confidence by the air carrier and accepted in confidence by the FAA. The effectiveness of the in-depth analysis that is the essence of a SWAP team investigation depends, to a great extent, upon the full, frank and open cooperation of the operator himself during the inspection period. His assurance by the FAA that the resulting recommendations are in the interest of safety and operational efficiency and will not be disclosed to the public are the major incentives impelling the operator to hide nothing and to grant free access to procedures, system of operations, facilities, personnel, as well as management and operational records in order to exhibit his normal course of operations to the SWAP inspectors. Based on the foregoing, it is also my determination that the requested SWAP Reports are exempt from public disclosure under the Public Information Act, 5 U.S.C. 552(b) (4), in that they contain trade secrets and commercial or financial information obtained from a person and are privileged or confidential.

Section 7.59 of Part 7 of the Department of Transportation Regulations, implementing § 552(b) (4) of the Public Information Act, reads in pertinent part:

(a) Trade secrets and privileged or confidential information that are within the statutory exemption include the following:

(1) Information furnished by any person, to the extent that the person furnishing the information would not customarily release it to the public.

(2) Information furnished and accepted in confidence.

* * * *

(b) The purpose of this section is to authorize the protection of records that are customarily privileged or are appropriately given to the Department in confidence. It assures the confidentiality of information obtained by the Department through questionnaires and required reports to the extent that the information would not customarily be made public by the person from whom it was obtained. In any case in which the Department has obligated itself not to disclose information it receives, this section authorizes the Department to honor that obligation.

* * * *

The above exemptions notwithstanding, it is Department policy, as expressed in Section 7.3 of Part 7 of the Regulations, that all records of the Department, except those that the Department specifically determines must not be disclosed in the National interest, for the protection of private rights, or for the efficient conduct of public business, are to be made available for public inspection and copying. It is my determination that disclosure of the requested SWAP Reports would be inconsistent with the purposes of Sections 7.57, 7.59, 7.61, and 7.65 exemptions, and would be contrary to the efficient conduct of the public business.

Accordingly, I am confirming the initial denial of your request to examine and/or copy the final SWAP Reports from the past year involving the 26 major air carriers. A copy of Part 7, as amended, of the Department of

Transportation Regulations is enclosed for your information.

Sincerely,

/s/ James R. Greenwood
JAMES R. GREENWOOD
Director of Public Affairs

EXHIBIT 4

Excerpts from SWAP Report
United Air Lines
February-March 1969

MAINTENANCE PERFORMANCE

FINDING No. 2

UAL's system for auditing aircraft maintenance records does not adequately detect discrepancies related to manual procedures for recording maintenance in their *aircraft flight log.*

Discussion

During the Team's review of the carrier's aircraft records, numerous cases were noted where the "Corrective Action" column of the flight logs did not contain correct entries, and deferred maintenance items were not properly recorded.

This is evidenced by examples found during logbook review which revealed: (1) Deferred items, when corrected on the flight log but no entry could be found on the flight logs where the item was originally deferred; (3) Flight discrepancies, entered in the flight log by the crew, not recorded, by maintenance, in the "Corrective Column", as having been corrected and (4) The continuous line required to be drawn across the flight log after corrective action taken by maintenance not being accomplished in all cases by the Line Maintenance Stations.

Examples:

1. B-737 aircraft N9135U had a cracked casting EAR in the right flap well deferred by DEN on 1/7/69 as item No. 27. No record of the casting replacement could be found on the flight log through 2/3/69. (Log No. 1841-17)

2. During an enroute inspection on B-727 aircraft N7627U on 3/18/69, it was noted on flight log 4343-8 that Detroit had rendered the APU inoperative because it was leaking and deferred the APU as item No. 174. The deferred Maintenance Form U0106D-2 in the back of the flight log revealed this item had been repaired at Newark and deferred item No. 174 cleared. The flight log did not reveal that deferred item No. 174 had been cleared by Newark maintenance.

3. On 12/2/68 the maintenance recorded on flight log page 958-13 (Book 61) of B-720 aircraft N7228U revealed that deferred item No. 164 was cleared by replacing the righthand fillet flap assembly. A review of prior flight logs failed to reveal where and when the flap was originally deferred.

• • • •

Finding No. 3

The Team's review of Progressive Maintenance Checks and the time control system for AUL B-727 commuter aircraft revealed the program to be operated satisfactory except for one (1) Service Check which had exceeded its approved check period.

Discussion

The Team's review of completed checks and time control records, at the Los Angeles station, revealed satisfactory records with the exception of one (1) Service Check (150 hours) which had exceeded its approved time limit by 55 minutes. No other time limits were found to have been exceeded on other checks, and the Team believes, and the records indicate this to be an isolated case.

The aircraft involved was B-727-22, N7620U:

A 3B check was accomplished 3/1/69 at an aircraft TSO (corrected) of 2021:33 hours and the 3C Check was accomplished 3/20/69 at an aircraft TSO (corrected) of 2172:28 hours.

The 3C Check was accomplished at 150:55 hours.

(Ref. 121.3)

Conclusion/Recommendation

The Team concludes that UAL is in non-compliance with FAR 121.3 in that they did operate an aircraft in excess of the times approved in their Operations Specifications.

No recommendation is believed necessary.

* * * *

Finding No. 4

United Airlines maintenance personnel do not always adhere to their Maintenance Manual Policies and Procedures when releasing aircraft for service as required by the Minimum Equipment List (MEL).

* * * *

Conclusion/Recommendation

The Team concludes that the above type discrepancies prevail because they are undetected by UAL's Quality Control, or Audit system. It is therefore recommended that UAL's Quality Assurance Group include in their audit practices the matter of adherence to manual procedures dealing with use of the Minimum Equipment List and deferral of aircraft maintenance.

* * * *

Finding No. 5

Tools and equipment used as test devices were found to be overdue for calibration, or devoid of records to show calibration schedule and accomplishment, in accordance with UAL manual instructions.

* * * *

Conclusion/Recommendation

The Team concludes that the line stations involved in the above deviations from UAL standard are in non-compliance with these UAL standards for maintenance of accuracy in test equipment. This matter *should also* become a part of UAL's audit system in order to detect the above type deficiencies while performing other audit functions.

* * * *

Finding No. 6

Rotable spare components (MR Program units), in stores as serviceable, are not, in some instances, so identified on the yellow I & R tag stubs, in accordance with UAL manual instructions. (All data on these yellow stubs missing.)

* * * *

Conclusion/Recommendation

The Team concludes that UAL aircraft components not identified as serviceable in accordance with the UAL Maintenance Manual of Procedures are not eligible for use on their aircraft.

The Team recommends that UAL review the actual status of all such unserviceable units and take the necessary action to return the subject units to serviceable condition and identify such condition by appropriate serviceable tags. This matter should also become a part of UAL's audit system inspections.

* * * *

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

Civil Action No. 1970-71

REUBEN B. ROBERTSON, III, ET AL., PLAINTIFFS,

v.

JOHN H. SHAFFER, ET AL., DEFENDANTS

FEDERAL DEFENDANTS' CROSS MOTION FOR PARTIAL SUMMARY JUDGMENT AND OPPOSITION OF PLAINTIFFS' MOTION FOR PARTIAL SUMMARY JUDGMENT

The federal defendants by their attorney, the United States Attorney for the District of Columbia, respectfully move the Court to grant partial summary judgment in their favor on the ground that there is no genuine issue as to any material fact and defendants are entitled to judgment as a matter of law. These defendants seek judgment that Systemworthiness Analysis Program Reports (SWAP reports) are exempt from disclosure under the provisions of the Freedom of Information Act by virtue of the provisions of 5 U.S.C. 552 (b) (3), (4), (5), and (7) and that certain Mechanical Reliability Reports (MRRs) are exempt from disclosure by virtue of the provisions of 5 U.S.C. 552(b) (3) and (4).

There are filed herewith: two affidavits of John H. Shaffer, with accompanying attachments, one affidavit dealing with SWAP reports and one dealing with MRRs; three sets of correspondence, marked Government Exhibits A, B, C; a statement of material facts as to which there is no genuine issue; a memorandum of points and authorities; and a proposed order.

/s/
HAROLD H. TITUS, JR.
United States Attorney

/s/
JOSEPH M. HANNON
Assistant United States Attorney

/s/
NATHAN DODELL
Assistant United States Attorney

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that service of the foregoing Federal Defendants' Cross-Motion for Partial Summary Judgment, two affidavits of John H. Shaffer with accompanying attachments, Government Exhibits A, B, C, statement of material facts, supporting memorandum of points and authorities and proposed order have been made upon plaintiffs by mailing a copy thereof to their attorney, James R. Michael, Esq., 1237 - 22nd St., N.W., Washington, D. C. 20037, and upon co-defendant by mailing a copy thereof to its attorneys, George W. Wise, Esq., Timothy J. Bloomfield, Esq. and David S. Lytle, Esq., 815 Connecticut Avenue, Washington, D. C. 20006, on this 31st day of May, 1972.

/s/
NATHAN DODELL
Assistant United States Attorney

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

Civil No. 1970-71

REUBEN B. ROBERTSON, III, ET AL., PLAINTIFF

v.

JOHN H. SHAFFER, ET AL., DEFENDANT

AFFIDAVIT

John H. Shaffer, being duly sworn, deposes and says:

1. I am John H. Shaffer, Administrator of the Federal Aviation Administration, Department of Transportation.

2. As Administrator of the Federal Aviation Administration I am responsible for and charged with the responsibility for aviation safety. 49 U.S.C. 1655(c)(1).

3. I have read and am familiar with the pleadings concerning the captioned case.

4. In order to provide for safety of flight in civil aircraft, the FAA has established a program known as Systemworthiness Analysis Program (SWAP).

5. The Systemworthiness Analysis Program is a system approach to the conduct of agency responsibilities for inspection and surveillance of the aviation industry.

6. A SWAP investigative team works in close cooperation with airline management to find any area of maintenance, operations, management, or overall performance which needs improvement. The system depends upon the frank and full disclosure of the airline.

7. Information investigated and discussed in a SWAP inspection includes financial and operational matters which would not customarily be released to the public. Much of the material is of the nature which would not be disclosed to competitors.

8. SWAP inspections also serve as the basis for enforcement action against the airline for failure to comply with the Federal Aviation Regulations.

9. The Systemworthiness Analysis Program had its beginning on 1 July 1966 with the inspection of air carriers. On 1 October 1969, the program was expanded to cover the general aviation industry.

10. The Systemworthiness Analysis Program is administered pursuant to FAA Handbook, Systemworthiness Analysis Program 8000.3B (See attachment No. 1).

11. The SWAP report is an internal memorandum intended for intra-agency communication containing a mix of facts and opinions written by the supervisory inspector.

12. The SWAP program operates with the understanding between the airlines and the FAA that the information will not be disclosed to the public. (Paragraph 208 (d) FAA Handbook 8000.3B, attachment No. 1).

13. Section 1104 of the Federal Aviation Act of 1958 (49 U.S.C. 1504, 72 Stat. 797) provides that the Secretary of Transportation may, upon written request, withhold information from public disclosure if such disclosures would adversely affect the interest of such persons and is not required in the interest of the public.

14. The authority vested by § 1104 of the Federal Aviation Act has been transferred from the Secretary of Transportation to the Administrator of the Federal Aviation Administration pursuant to 49 CFR 1.47(a).

15. On 4 December 1970, FAA received a request from the Air Transport Association of America on behalf of 28 member airlines that all SWAP reports be kept confidential pursuant to § 1104 of the Federal Aviation Act of 1958. (See attachment No. 2)

16. On 18 February 1971, I determined that the disclosure of the SWAP reports would adversely affect the interest of the airlines involved and disclosure was not required in the interest of the public. (See attachment No. 3)

17. Plaintiffs' Memorandum of Points and Authorities, at page 2, states:

". . . SWAP Reports, which purport to identify and document specific defects in safety practices of air carriers, are provided to and discussed in detail with air carriers and are widely circulated among the members of defendant ATA. See attached affidavit of Plaintiff Robertson, p. 3."

Mr. Robertson's affidavit states, at page 3, para. 6:

". . . It is my information and belief that the results of SWAP evaluations, which purport to identify and document specific defects and shortcomings in the safety and maintenance systems of air carriers, are provided to and discussed in detail with the air carriers and are widely disseminated and discussed throughout the airline industry. . . ."

Under our procedures, FAA does not make information from SWAP Reports available to ATA or to any operator other than the operator being inspected. Information from the SWAP Report relating to findings of the SWAP team may be provided to the operator being inspected. See, e.g. Handbook, para. 208. The purpose is to enable the operator to intelligently discuss the SWAP findings with the principal inspector and SWAP team members at the post-inspection visit. Such discussion facilitates the taking of corrective action, where necessary.

Thus, insofar as the aforementioned quotations deal with FAA circulation and/or dissemination of SWAP report information, they are incorrect. The only other manner in which the dissemination and circulation alleged by plaintiffs could occur would be if each operator that is subject to a SWAP inspection disseminated any such information as may be provided it. On information and belief and on my knowledge of the airline industry, I do not believe the operators circulate or disseminate SWAP information as alleged by plaintiffs.

/s/ John H. Shaffer
JOHN H. SHAFFER

Subscribed and sworn before me this 30th day of May 1972.

/s/ William G. Derry
Notary Public in and for
the District of Columbia

My commission expires 14 Sept. 1975.

HANDBOOK

[8000.3B]

SYSTEMWORTHINESS ANALYSIS PROGRAM

[F.A.A. Seal]

JULY 23, 1969

Reprinted NOV 1970
Reprint includes Changes 1 thru 2

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

Distribution: 8000; FFS-1, 2, & 5 (all employees)
FIA-O (std.)

Initiated By: FS-320

FOREWORD

1. *PURPOSE.* This handbook authorizes the Systemsworthiness Analysis Program (SWAP) as a program of the Flight Standards Service and provides procedures and standards regarding its organization and operation.
2. *CANCELLATIONS.* Handbook 8000.3A, dated August 16, 1968, is canceled.
3. *BACKGROUND.* The Flight Standards Systemsworthiness Analysis Program (SWAP) is a systems approach to the conduct of agency responsibilities for the surveillance of commercial aviation operators. Recognizing that commercial aviation safety is only as good as the management system which produces it, SWAP provides the FAA with an audit-type analysis of these management systems.
4. *DEVELOPMENT AND UTILIZATION.* Order 8000.3, dated June 9, 1966, required full implementation of SWAP on a permanent assignment basis beginning October 1, 1967. Implementation of the air carrier program is now complete. A test program conducted in the Southern Region to determine applicability of SWAP methods to surveillance of general aviation commercial activities was completed October 1, 1968. Results of this test indicate that more effective and efficient use of manpower resources can be achieved through application of SWAP to certain segments of general aviation surveillance. Each Regional Director and the Assistant Administrator, European Region, shall expand and utilize the program in accordance with this revised handbook and consistent with the following schedule:

   a. *General Aviation Phase I.* By October 1, 1969, have personnel selected for temporary SWAP team assignment, develop schedule of inspections to be conducted, and begin inspections. Reference Chapter 7.

b. *General Aviation Phase II.* By January 1, 1970, make permanent assignments of personnel and effect relocation as necessary. Adjust inspection schedules and incorporate program refinements.
c. *General Aviation Phase III.* By July 1, 1970, effect full implementation.

5. *PROGRAM RESPONSIBILITY.* The Flight Standards Service is responsible for the overall program management of SWAP and shall provide procedures, standards, and other usual staff services.
6. *PUBLIC AVAILABILITY OF INFORMATION.* This handbook is in no way restricted and the employee to whom it is issued will make it available for review by the public upon request. Copies of this handbook may be obtained (for a nominal fee) by written request to the:

Manager of Headquarters Operations
Federal Aviation Administration
Department of Transportation
800 Independence Avenue, SW.
Washington, D.C. 20590

/s/ R. S. Sliff
Acting Director
Flight Standards Service

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CHAPTER 1. GENERAL INFORMATION AND OBJECTIVES

1. *DESCRIPTION.* The Flight Standards Systemsworthiness Analysis Program represents a systems approach to the conduct of agency responsibilities for inspection and surveillance. To make optimum use of the limited number of inspectors in the face of an increasingly active industry, this program provides for the use of inspection personnel with the greatest possible precision so that their efforts can be concentrated in those areas having the greatest potential effect on safety. The key features of the Systemsworthiness Analysis Program are:
   a. *Orienting maintenance and operations surveillance inspection practices* to a comprehensive systemsworthiness concept in order to permit inspections in depth in the major areas of operations and maintenance.
   b. *Utilizing teams of inspectors* to perform programmed and special inspections when indicated by safety trends, with a corresponding efficency in routine resident inspector surveillance.
   c. *Employing sophisticated analysis* of performance and reliability data to better point inspection efforts toward critical areas.
   d. *Defining the role of the resident inspector* regarding systemsworthiness analysis activities.
2. *OBJECTIVES.* The objectives of the Systemsworthiness Analysis Program are to:
   a. *Provide efficient* utilization of inspector personnel.
   b. *Provide fast* detection and correction of deficiencies in flight operations and maintenance systems.
   c. *Assure the quality* of FAA inspections of air carriers, commercial operators, air taxi operators, repair stations, airmen schools, and other appropriate industry segments.

   d. *Emphasize responsibility* of resident inspectors as primary agency representative.
   e. *Eliminate* to the maximum extent practicable inspections by resident inspectors assigned to the operator to permit these inspectors to maintain surveillance of the overall posture of the operator to determine any sensitive areas which may require examination by the SWAP team.
3. *HOW PROGRAM OBJECTIVES ARE ACCOMPLISHED AND BENEFITS.*
   a. *Efficient Utilization of Inspector Personnel.*
      (1) By concentrating on significant safety deficiencies, thus getting more out of our safety dollar.
      (2) Minimizes frequency of inspections on operators performing satisfactorily.
      (3) Permits flexibility in the deployment of inspectors.
      (4) Avoids inspections by the numbers.
      (5) Permits across-the-board use of inspectors.
   b. *Fast Detection and Correction of Deficiencies.*
      (1) By use of key indicators such as MRR, MIS, MIR and M&D data, and operators' reliability reports.
      (2) By periodic systemsworthiness analysis in depth which provides an optimum method of disclosing deficiencies in operations and maintenance programs.
      (3) FAA requested corrective actions are based on more comprehensive factual data.
      (4) Allows principal inspector freedom to objectively monitor his assignment.
   c. *Assure Quality FAA Inspections.*
      (1) Systemsworthiness analysis team members, not assigned to any particular operator, are objective.
      (2) The Systemsworthiness Analysis Program broadens technical competence of FAA in-

spectors by exposing them to a number of various management systems.

(3) By placing manpower on deficient areas, inspectors not tied to the numbers.

d. *Emphasize Responsibility of Principal Inspectors as Primary Agency Representative.*

(1) By supporting principal inspector with factual, documented findings of analysis team with which to justify and defend agency required corrective actions.

(2) By functioning as the key agency representative, he is clearly the focal point for FAA inspection and surveillance of his assigned operator on a systemwide basis.

4. *PRESENTATION.* The material contained in this handbook is presented in the following sequence:

a. *Chapters 2, 3, and 4* provide instructions applicable to the overall Flight Standards Systemsworthiness Analysis Program.

b. *Chapters 5 and 6.* The air carrier maintenance and operations areas of the program are discussed separately. Although these areas are complementary and constitute subprograms within the overall Systemsworthiness Analysis Program, their respective subject matters are sufficiently specialized to require separate treatment.

c. *Chapter 7* provides instructions for implementation of the General Aviation portion of the Systemsworthiness Analysis Program.

5.-49. *RESERVED.*

CHAPTER 2. ORGANIZATION

50. *MISSION AND FUNCTIONS.* SWAP teams are established as an element of the Flight Standards Division, on the regional level, to perform in-depth analysis of commercial aviation operators. When performing these analysis, the team serves as a

factfinding arm of the air carrier principal inspectors or general aviation district office (GADO) supervising inspector assigned to the operator. The product of the team effort is a report of findings and recommendations and is provided to the air carrier principal inspectors or GADO supervising inspectors who have responsibility for determining what corrective action is to be taken.

51. *STRUCTURE.* SWAP teams are organizationally subdivided into maintenance sections and operations sections each containing a number of permanently assigned team members who perform the analysis function primarily in their area of specialization. Team members are responsible to a section chief who in turn is responsible to the chief of the Systemsworthiness Analysis team. For General Aviation SWAP Team Organization see paragraph 503a.

52. *PHYSICAL LOCATION.* The regional director shall determine the location(s) of the SWAP team(s) based on location of major workload, facilities, travel per diem requirements, etc. The use of split teams is a prerogative of the regional director and is recommended where efficiency, expenses, team morale, etc., are significant factors.

53-99. *RESERVED.*

CHAPTER 3. ELEMENTS OF THE SYSTEM

100. *SCHEDULED SYSTEMSWORTHINESS ANALYSES.* Systemsworthiness analyses will be scheduled at such frequencies as to permit a complete analysis approximately every 18 months. The operations and maintenance analyses of air carriers should normally be scheduled separately, since each is concerned with different segments of management often located in different cities. See Chapters 5, 6, and 7 for identification of the areas to be individually analyzed during each scheduled 18-month cycle.

101. *SPECIAL SYSTEMSWORTHINESS ANALYSES.* Special systemsworthiness analyses will be conducted on an as-needed basis and may be required by Washington Headquarters, the regional office, the area office, or resident inspector whenever there are valid indications that the performance of a particular operator is falling below an acceptable level. The procedures employed are similar to those followed in a scheduled analysis, except that the analysis is concentrated on those areas of the operator's system that are suspected of being deficient. Some conditions that would warrant a request for a special analysis are:

a. Accidents and incidents.
b. Violations.
c. Poor financial condition. Some examples of indications of financial stress that can be detected by inspectors are:

(1) Demands for "cash on delivery" by suppliers who formerly allowed credit.
(2) Curtailment of flight operations.
(3) Significant layoff of personnel.
(4) Significant employee turnover.
(5) Delays in meeting payrolls.
(6) Sale or repossession of aircraft.
(7) Inadequate maintenance of aircraft.

d. Repetition of the same types of difficulties reported under the Mechanical Reliability Reports (MRR) system over an extended period of time.
e. Consistently high number of items on the Mechanical Interruption Summary Reports (MIS).
f. High percentage of uncompleted pilot-in-command flight checks.
g. High percentage of complaints concerning safety items.

102. *PERSONNEL.* Since the success of the Systemsworthiness Analysis Program depends in no small part on the quality of the personnel selected, particular attention should be given to the choice of the team members. In addition to the obvious experience and technical qualifications required, the following qualities are considered essential:

a. Demonstrated analytical ability.
b. Attention to detail and thoroughness.
c. Logical thought processes that relate causes and effects and formulate conclusions based on facts.
d. Tact and diplomacy in dealing with people.

Airman Certification Inspectors (ACI) with premium pay may be assigned as team members on a full-time basis and are not required to obtain 750 TR/ER hours annually. Such personnel are, however, expected to accomplish the ACI job functions necessary to the SWAP inspections and the regions' ACI work program. The assignment of ACI personnel to SWAP teams is not intended to establish new ACI positions in the regions.

103. *SYSTEMWIDE.* To the extent practicable, each region will conduct systemsworthiness analysis of assigned operators on a systemwide basis. For those situations where assistance will be required from other regions, the regions concerned should mutually agree to such arrangements in advance.

104. *ASSISTANCE FROM OTHER FAA PERSONNEL.* The Flight Standards Service has primary responsibility for the certification and operations of commercial aviation enterprises. In performing this function, Flight Standards' offices may request the assistance and advice of other FAA offices (services) in carrying out this responsibility. Every effort should be made to avoid excessive travel to inspect isolated, relatively minor facilities. These inspections can be easily performed by the region in whose area the facility lies. Obviously, common sense and judgment must be used, since there may be situations requiring deviations from this procedure.

105. *RECOMMENDATIONS FOR REGULATORY CHANGES.* The SWAP team is in an excellent position for determining amendments to the FARs. Team members are encouraged to submit proposed changes to the FARs by separate letter to the Regional Chief, Flight Standards Division for further forwarding to Washington headquarters.

106.-199 *RESERVED.*

CHAPTER 4. SYSTEMSWORTHINESS ANALYSIS PROCEDURES

200. *TEAM COMPLEMENT.* The size and makeup of the team required to perform a scheduled or special analysis will vary depending on the number of functional areas to be covered, the size and complexity of the operator, etc. Team assignments and scheduling are the responsibility of the Chief, Systemsworthiness Analysis.

201. *TEAM BRIEFING.* The team leader, or the inspector designated as being in charge of the particular analysis, will brief the team members prior to the start of the inspection. This briefing should include the inspection plan, the inspection techniques to be used, the specific areas to be assigned to each team member, team conduct and actions in working with the operator, and the estimated time to complete the inspection. This briefing should also include any special information available from other sources such as MRR data, financial information, and complaints. Team members will be cautioned not to discuss any of the team findings, conclusions, or opinions with anyone other than team members and appropriate agency personnel prior to the post-inspection briefing of the operator.

202. *AIR CARRIER PRINCIPAL OR GADO SUPERVISING INSPECTOR'S BRIEFING.* The Systemsworthiness Analysis team will be thoroughly briefed (operations or maintenance/avionics as appropriate)

prior to the start of the inspection. This briefing should cover the following subjects:

a. The operator's compliance disposition and working relationship with FAA.
b. The operator's organization and a resume of its key personnel.
c. A summary of the factors pertinent to the area to be analyzed including both good or marginal features.
d. Any other information which will assist the audit team.

203. *OTHER BRIEFINGS.* The inspection team will have free access to manuals, correspondence, and records pertaining to the operator, and any other appropriate data maintained by district offices. All material and data pertinent to the inspection will be studied by the team to acquaint them with the operator's policies, instructions, and procedures. It is essential that the team has a good working knowledge of the operator's/management policies and procedures applicable to the area to be investigated before they meet with the operator. In this manner, the team will be better equipped to discuss intelligently the policies and methods used by the operator in the direction and control of its operation.

204. INITIAL MEETINGS WITH THE OPERATORS.

a. *The air carrier principal or GADO supervising inspector will arrange* for and chair the initial meeting of the inspection team and the operator. He will explain the purpose and scope of the inspection and identify the areas to be investigated. In cases where a problem area is suspected to exist, it should be frankly discussed with the operator. This straight-forward approach will help to foster a feeling of mutual trust and respect that is beneficial, if not essential, to the analysis. At this time, the operator will be advised that he will be informed of the team's findings at a meeting to be called by

the district office when the inspection has been completed.

b. *The operator should also* be advised that experience has shown that rumors relating to FAA findings while the inspection is in progress are not unusual and should be disregarded. Such rumors usually stem from the searching nature of the questions posed by members of the team. Team members will normally not discuss findings with the operator's personnel until the team is ready to formally brief the operator. If a serious safety problem is disclosed during the inspection, the operator will be informed so that prompt corrective action can be taken.

205. THE SYSTEMSWORTHINESS ANALYSIS FUNCTION.

a. *As an essential preliminary*, each team member will familiarize himself with the operator's policies, procedures, records system, and directives which govern the particular area to be analyzed. During the review and analysis, the team member should make notes and references to serve as memory-joggers during the inspection. This will minimize the need for subsequent research of manuals, records, and files to ascertain a specific policy or directive.

b. *A successful systemsworthiness analysis* requires careful factfinding and objective analysis. When a deficiency or questionable area is detected, a thorough search must be made to trace it back through the system to the causal point of origin. The inspector must concentrate on the area under analysis and pursue it to a positive completion so that a factual determination can be made.

This may occasionally involve consideration of other areas that were not originally intended for inspection. When this occurs, the new area should be investigated until factual conclusions

can be drawn. It is important, however, that the inspector return to the area under consideration before he was sidetracked, since any loss of continuity could result in erroneous or incomplete findings.

c. *Deficiencies existing* in any organization may result from a variety of causes. The team should be particularly alert to indications of inadequate communications or followup procedures and lack of effective delegations of authority. Identifying the deficiency and isolating the factors contributing or causing it may be expedited by applying the following procedures:

(1) Relate the cause of the deficiency to one of the following:

(a) *Lack of Supervision.* Check for the adequacy and understandability of instructions and directives, the training and competency of personnel. In this respect, do employees understand and effectively carry out company policies and procedures? Determine whether proper delegations of authority are made down through the chain of command. It is one thing to delegate authority and another to see that delegated responsibilities are carried out effectively in accordance with established policies and procedures. Therefore, the team must evaluate the adequacy of control exercised by management by determining how management follows up in order to ascertain policy and procedural compliance. Also, remember even if company policy is carried out through the chain of command, the basic policy or procedure could be wrong.

(b) *Inadequate Procedures.* Determine whether or not procedures are set

forth clearly and are practicable of accomplishment. When analysis of a problem area discloses that existing instructions are inadequate or the system used in implementing instructions lacks proper definition, detail, or sensibility, then procedures should be the prime area of concern. For example, past inspections have revealed extremely cumbersome or impractical airman records systems. In those cases, inspectors have frequently disclosed violations of flight time limitations or failure to schedule crewmembers for required recurrent training. Past inspections have also disclosed areas where procedures were needed, but none were provided.

(c) *Inadequate Policies.* It is important that the team determine whether the operator's policy is set forth in a manner which will assure compliance with acceptable safety standards. Assuming that company policy as set forth in the operator's manuals and directives is satisfactory, determine whether company policy is in fact being carried out in actual practice. Some past inspections have revealed operators having excellent training programs laid down in their manuals, who, in fact, had no training program at all and which existed only on paper. It is, therefore, imperative that the operator have established adequate procedures to monitor compliance with company policy.

(d) *Fraudulent Records.* When the team suspects that the operator is falsifying his records, assistance by regional Compliance and Security, Audit, and Legal

personnel will probably be necessary. Frequently, a simple crosschecking of company records will reveal discrepancies, such as checking aircraft logbooks against training records. Another technique successfully used in the past has been to check flight plan information available in ATS facilities against company records.

(2) *The art of asking the right question* at the right time of the right person is one of the key attributes of a successful systems-worthiness analysis. This art should be employed continuously by team members during an inspection, since it serves to expose abstract areas, confirms or disproves adherence to the established systems, and provides an insight into the acceptance and applicability of established policies and procedures.

Team members should not confine their inquiries to any particular group of personnel or organizational level. It may be anticipated that supervisory personnel will be well-versed in the policies and procedures governing the work functions for which they are responsible. However, they may be unaware of trouble spots existing at lower echelons or short cuts taken at the working level that may adversely affect compliance with the regulations and accepted standards of safety.

206. PRELIMINARY REPORT. Immediately following completion of the inspection, a preliminary report will be prepared by the team. This report, which must be a clear concise, factual record of the team's findings, provides the basis for briefing the air carrier principal or GADO supervising inspector in preparation for the post-inspection meeting with the operator.

207. POST-INSPECTION MEETING WITH THE OPERATOR.

a. *The air carrier principal or GADO supervising inspector* will arrange for and serve as agency spokesman in the team's meeting with the operator.

b. *The purpose of the meeting* is to informally advise the operator of the team findings and to permit free discussion of same with the operator. Any discrepancies discussed at the meeting must be fully supported by facts acquired by the team. However, the operator should be given ample opportunity to present additional facts which he feels mitigates discrepancies found by the inspection team.

208. REPORT OF SYSTEMSWORTHINESS ANALYSIS (RIS: FS 8000-3).

a. *The SWAP team report* is the vehicle that transmits the findings and recommendations developed during the inspection. It must be so written that the reader understands it, is satisfied that all information has been included, and feels confident that conclusions are supported by facts.

b. *Wide latitude regarding format* is afforded the team in preparing the final report. Basically, however, the report should contain: Findings (statements of fact); Discussion (description of the team's observations and documentation supporting the findings); and Conclusion (statement of the causes of the deficiency, their effect on safety or compliance with the regulations, and the team recommendation).

c. *Distribution of the reports* within the region shall be determined by the regional director. Copies of individual air carrier SWAP reports should not be forwarded to Washington headquarters. In lieu thereof, a report of the significant findings of the SWAP team, i.e., violations, deteriorating maintenance, weaknesses in pilot training programs, etc., shall be furnished to the Chief, Maintenance Division, FS-300, and Chief, Operations Division, FS-400, as appropriate. The reports of significant findings should include the followup action taken or planned by the FAA or operator. During implementation phases, FS-300 and FS-400 will be provided with copies of general aviation SWAP reports.

d. *Nondisclosure to the Public.* The contents of SWAP reports constitute findings and recommendations employed by the FAA in the enforcement of Federal Aviation Regulations. Accordingly, under the exemption authorized by Section 7.65 of Part 7 of the DOT regulations, copies of SWAP reports or information therein shall not be publicly released or handled indiscriminately. Individual inspection team reports shall be considered as being "For Official Use Only" under the provisions of Order 1600-.15C, Information "For Official Use Only" and shall be marked in accordance with paragraph 7 of the Order. This classification is for the completed SWAP report and does not prohibit transmitting to the operator a listing of valid findings prior to the post inspection meeting when the principal inspector and SWAP team leader agree that such action will be beneficial.

209. OFFICIAL NOTIFICATION OF OPERATORS.

The air carrier principal or GADO supervising inspector will carefully review the final report, paying particular attention to the discussion and recommendations pertaining to each finding. After his review, he will prepare a letter to the operator advising of deficient areas and also reaffirm verbal agreements with the operator and confirm actions that may have been taken during the SWAP inspection. The letter will request the operator to take corrective action and, as appropri-

ate, establish deadlines for accomplishment. The district office will follow through to assure that necessary corrective action is taken by the operator.

210. *ROLE OF THE AIR CARRIER PRINCIPAL OR GADO SUPERVISING INSPECTOR.*

a. *It is essential* to the concept of the Systemsworthiness Analysis Program that the role of these inspectors be fully understood. The air carrier principal inspector serves as the principal FAA focal point in dealing with the operator on matters within his technical responsibilities (operations, maintenance, and avonics). The GADO supervising inspector or his assigned representative is the FAA focal point in all dealings with the operator. They are the eyes and ears of the regional director with respect to the detection of marginal areas of compliance. Accordingly, they are responsible for the broad surveillance of the operation as to whether it meets the terms of the regulatory requirements. Further, they are the key individuals who assure and enforce, if necessary, compliance with the FARs. In pursuit of these duties, these inspectors are the persons upon whom the region depends to provide timely notification when special systemsworthiness analysis inspections are needed in order to probe suspected areas of marginal or substandard compliance.

b. *Since these inspectors are the persons most familiar* with the operation, they will be of considerable assistance to the Systemsworthiness Analysis team during scheduled as well as special analyses. They should not take an active role as a participant of the analysis team, but can help the team members by pinpointing possible areas for analysis. During the analysis process, they remain the principal FAA spokesmen with regard to items which require immediate attention as well as after the analysis with regard to the initiation and followup of

corrective action programs. In this respect, they will be backed by the factual documented findings of the team.

c. *The overall goal of the Systemsworthiness Analysis Program* is to provide for a properly applied directed surveillance effort. One part of the goal is to permit the assigned inspectors to be placed at the pulse of the operator, free them from the more routine duties, and facilitate access to the operator's entire system of operation. Accordingly, the air carrier principal inspector and GADO supervising inspector are not expected to conduct inspections routinely in; for example, areas such as facilities or airmen records when these areas have been recently reported to be satisfactory by the SWAP team. However, in the event the SWAP team points out sensitive areas which require additional surveillance, the certificate-holding office is to accomplish the necessary surveillance until the condition reported by the SWAP is resolved.

211. *PROGRAM ACCOUNTABILITY.* Units and manhours spent conducting air carrier and general aviation maintenance/avonics systemsworthiness analysis will be reported on FAA Form 1380-21, Maintenance and Avonics Systemsworthiness Analysis Work Program and Activity Report (RIS: FS 1380-10). FAA Form 1380-22, Air Carrier Operations Systemsworthiness Analysis Work Program and Activity Report, (RIS: FS 1380-11), will be used by air carrier operations teams, and line item 50A on FAA Form 1380.17, General Aviation Operations Work Program and Activity Report (RIS: FS 1380-4) will be used by the general aviation operations teams. Instructions for executing these forms are contained in Handbooks 1380.1A and 1380.2A, Standard Procedure for Uniform Reporting.

212. *HANDLING OF TEAM FINDINGS.*

a. *General.* One of the objectives of the Systemsworthiness Analysis Program is to emphasize the responsibility of assigned inspectors as the primary agency representatives for their operators. In order to effectively carry out this responsibility, these inspectors must heavily rely on the findings of the SWAP teams. Accordingly, it is imperative that the team findings be FACTUAL. In cases where noncompliance is found by the SWAP team, it is expected that the team findings will include sufficient evidence to support the alleged noncompliance. There may be occasional instances where such evidence is not immediately or readily available. In such cases, the team should secure all possible supporting information concurrent with their inspection duties. This information should be turned over to the assigned inspector for handling.

b. *Processing of Noncompliance.* The SWAP teams have no responsibility for the processing of these reports. Noncompliance reported by SWAP teams will be handled by the district office in accordance with Handbook 8030.7, Compliance and Enforcement.

213. *FEEDBACK REGARDING CORRECTIVE ACTION.*

a. *An important element of the SWAP concept is feedback* to those organizational elements responsible for overall program management. Feedback provides an orderly means of determining needs, analyzing operations, and making comparisons along program lines. It enables the various levels of management to know how things are going, to identify problems, to recognize the need for program change, and to permit adjustment of program emphasis or changes in policy or procedures.

b. *This feedback should* be provided by a followup report transmitted through the appropriate office to the region within a reasonable time (normally within 60 days) following the receipt of a SWAP report. The followup report should contain the following minimum information:

(1) Where corrective action has been taken.
(2) Where corrective action is not forthcoming.
(3) Action underway or planned on open items.

A carryover item will be resolved and reported as soon as possible.

214.-299. *RESERVED.*

CHAPTER 5. SYSTEMSWORTHINESS ANALYSIS PROGRAM (AIR CARRIER MAINTENANCE)

SECTION 1. GENERAL INFORMATION

300. *PURPOSE.* This section provides guidance and procedural instructions applicable to the maintenance subsystem within the overall Flight Standards Systemsworthiness Analysis Program.

301. *OBJECTIVES.* The Systemsworthiness Analysis Program applies an auditing technique to assure:

a. An accurate and penetrating assessment of all elements of the operator's maintenance systems.
b. Improved effectiveness of all surveillance functions through analysis of the vital elements of a maintenance system.
c. Increased effectiveness of the principal inspector concept.
d. The acquisition of factual data relating to the status of the operator's compliance with applicable Federal Aviation Regulations.
e. A factual determination of the potential of a maintenance program to consistently turn out aircraft and components that are safe for use in flight.

302. *OPERATOR'S ORGANIZATION.* The systems used by operators to maintain aircraft may be divided into four primary areas. The successful and economical operation of these complex maintenance areas is dependent upon the thoroughness and effectiveness of directives and followup systems generated by the operator's management group. These directives and followup systems normally consist of the policies, procedures, and methods applicable to one or more of the listed functions.

AREAS	FUNCTIONS
1. Standards and Procedures	a. Training
2. Quality Assurance	b. Quality Control
3. Equipment and Facilities	c. Inspection
4. Personnel and Training	d. Production Control
	e. Product Improvement/Modification
	f. Maintenance Performance
	g. Performance Analysis

NOTE: Until a new form is developed (effective 1 July 1970), continue to report SWAP activities on FAA Form 1380-21 in the same manner using the same functional areas.

303. *SCHEDULED ANALYSIS.*

a. *In general,* a scheduled systemsworthiness analysis should be limited to one area of an operator's maintenance system. This should assure that the time lapse between analysis is not sufficiently long to permit a significant deterioration in the operator's maintenance system. However, several functions of any area may be analyzed at the same time by an optimum team without seriously disrupting the operator's maintenance system or unduly interfering with its personnel.

b. *A SWAP team analysis* of an air carrier or commercial operator should not require a routine SWAP team visit to the certificated facilities with which the carrier contracts unless that facility functions as the physical location of the carrier's main maintenance base. During the analysis of an air carrier's or commercial operator, a nonroutine visit to a certificated contract facility may occasionally be required to establish or verify that work is being performed in accordance with the carrier's maintenance program. Such visits should be coordinated with the facility's certificate holding office and should be limited to the specific problem at hand and not to determine the repair facility's compliance with its own manual or the regulations.

304. *SPECIAL ANALYSES.* Examples of maintenance items that would warrant requesting a special analysis include:

a. Repetition of the same types of difficulties reported under the MRR system over an extended period of time.

b. A consistently high number of items on the Mechanical Interruption Summary Reports.

305.-329. *RESERVED.*

SECTION 2. ANALYSIS PROCESS

330. *BRIEFING.* In addition to the general items cited in paragraph 202, the principal inspector's preanalysis briefing should also cover the following:

a. *Problem areas* existing within the operator's organization relating to equipment, general operation, maintenance programs, and maintenance contractors.

b. *Location of bases* where major maintenance is performed, types of maintenance being accomplished, and the frequency of such work.

331. *PREPARATION.*

a. *Reviewing the air carrier's MIS and MRR files* will help the analysis team member to identify problem areas in the carrier's maintenance system. Repetitive occurrences associated with an aircraft, its powerplants, or components (e.g., incompleted trips, frequent delays attributable to maintenance, etc.) are indicators warranting exploration during the actual analysis.

b. *Among other things*, the operator's management system should provide procedures for:

(1) The proper channeling of each piece of aircraft hardware through essential inspection and maintenance shops.

(2) The proper maintenance and inspection of parts routed to the individual shop.

(3) Ascertaining that each part repaired and/or inspected by the individual shop is not released to service unless it is in a safe condition for flight.

(4) Recording items of work performed in each shop area through which the part was routed.

(5) Indicating the part is in safe condition for flight prior to being returned to service.

332. *ANALYSIS AT WORK.* An illustration depicting the analysis processes including the technique for a penetrating analysis is shown on figure 1. Study this diagram; it illustrates the type of follow-through (ascertaining cause and determining effect) included in the analysis processes.

a. The left-hand side of the illustration is another method of presenting the operator's seven management groups responsible for establishing maintenance directives, policies, and procedures. In applying the Systemsworthiness Analysis Program, the analysis team evaluates and famaliarizes themselves with those management segments to be analyzed.

b. The first level to which the management's policies are applied is the submanagement and supervisory categories at the overhaul base, check base stations, and line stations.

c. The analysis team verifies the application, acceptance, and comprehension of top management policies at this level. When only partial comprehension, acceptance, or application is found, the CAUSE for deviations will be determined.

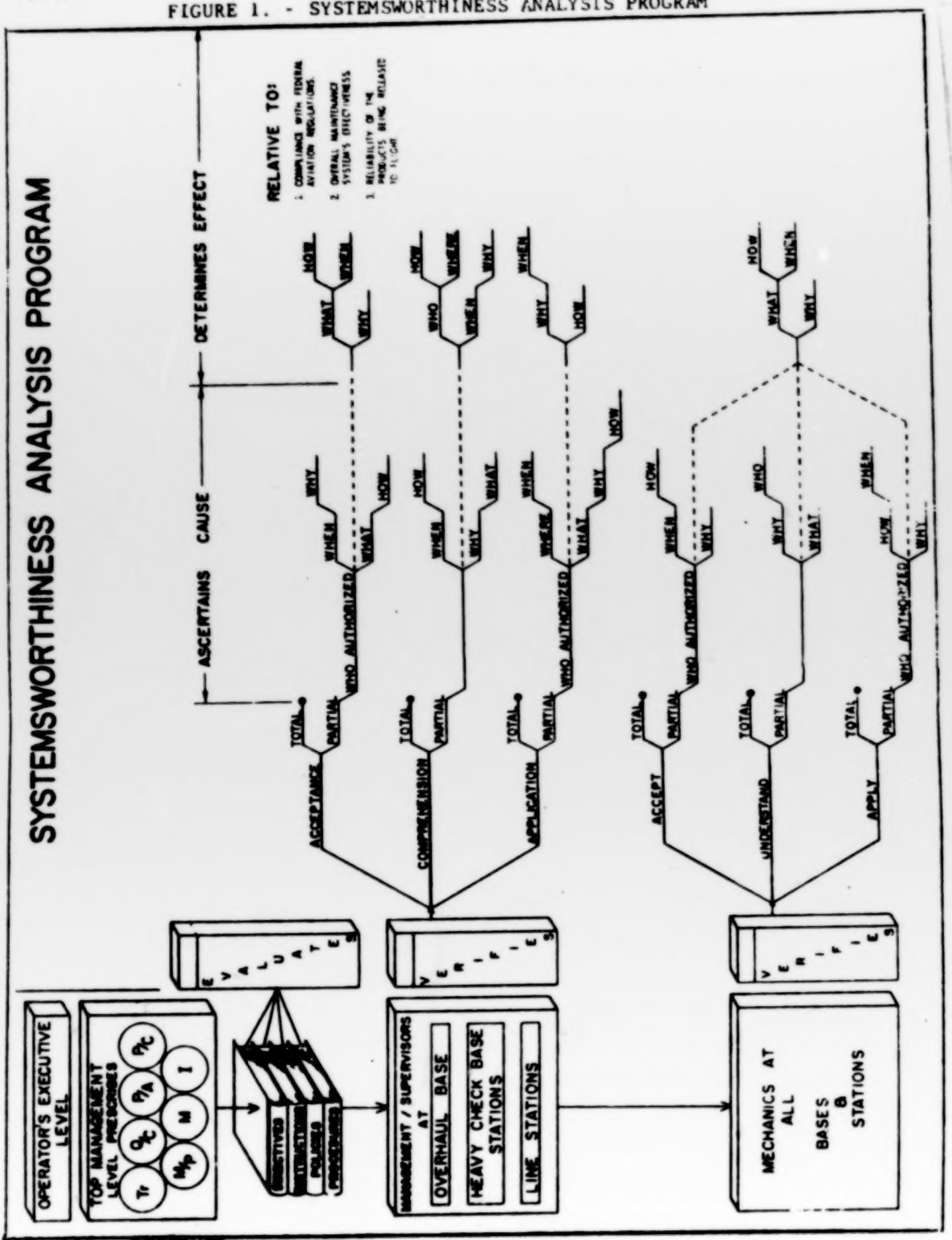
d. In making a determination as to cause and effects of deviations from significant policy, certain lead words can be used advantageously (who, what, when, where, why, and how). The type of modifiers to be used with these lead words will de dependent upon the information being sought; e.g., HOW was it authorized (in writing or verbal), WHO authorized the chance, etc. It is apparent that the use of such words does not lend the question being asked to a yes or a no answer. They tend to draw out the person receiving the reply and open up avenues for further questions. These fundamental lead words are highly effective analysis tools when used in a reasonable manner by a good listener.

e. The verification process of the Systemsworthiness Analysis Program is also used at the mechanic level. The techniques employed at this level are the same as those used for the submanagement and supervisory levels.

f. It is apparent that should the penetration phase of SWAP be applied to all deviations regardless of their significance, the analysis process would be cumbersome and time consuming. Therefore, before the penetrating processes are used on a deviation, their probable impact on compliance with FARs and the effectiveness of the overall maintenance system should be analyzed by the team. Should these analyses show the deviation would adversely affect the integrity of the maintenance system, etc., the penetration processes should be employed. If, on the other

hand, the analysis indicates the deviation is significant to the overall maintenance program, it should be noted by the audit team for discussion and disposition by the principal maintenance inspector.

FIGURE 1. - SYSTEMSWORTHINESS ANALYSIS PROGRAM



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335.-339. RESERVED.

SECTION 3. AIDS TO ANALYSIS

340. *PRIMARY ORGANIZATIONAL AREAS.* The following paragraphs provide information on the four primary areas used by operators to maintain their aircraft.

341. *STANDARDS AND PROCEDURES.* This basic area includes the operator's system for establishing what he is going to do and how he is going to do it. Where manuals are required by regulation, this is the area which includes responsibility for their publication, accuracy, adequacy, distribution, and revision status. This area also includes the operator's system for establishing and disseminating policy and guidelines for management decisions affecting flight safety and airworthiness. Since this area constitutes management's communication network, close attention should be given to the structure, responsibilities, staffing, and facilities.

In analyzing this area, it is important to bear in mind that individual discrepancies are usually indicators of system breakdown. When manuals are found with obsolete pages, SWAP should be concerned with the lack of management control which allowed this condition to exist. SWAP should be alert to situations where responsibilities and authority in regard to airworthiness determinations, etc., are not clearly delineated. Where procedures for work performance, inspection, testing, etc., are inadequate or erroneous, SWAP should be concerned with the qualifications, staffing, supervision, and control of the people and system which produce the procedures.

342. *QUALITY ASSURANCE.* This basic area includes all functions and activities directed toward assuring that work performed and services rendered are done so in accordance with the operator's policies, procedures, instructions, and in accordance with the applicable Federal regulations. This includes the system by which the operator assures that its prod-

uct conforms to an established standard. "Product" here is used in its broad sense. "Product" may mean an overhauled component, an installed modification, a trained airman, a repaired aircraft, etc.

A specific organizational segment may be responsible for this function. These units may be called an inspection department, quality control department, technical compliance, etc. Regardless of the product and of how formally structured this function is, the basic essentials are the same.

343. *EQUIPMENT AND FACILITIES.* This analysis area includes those organizational elements responsible for providing tools, classrooms, materials, shops, supplies, parts, and any other article or commodity, except people, used in the operator's "production" process. This function is also responsible for maintaining the condition and adequacy of these "production tools." Where the previous two areas have been concerned with "what is done" and "how well it is done," this area assures the wherewithal to actually do the job.

344. *PERSONNEL AND TRAINING.* This very important analysis area encompasses the total human element. It is concerned with both the quantity and quality of people. It includes availability, qualifications, competency, certificate requirements, direction, and training of the operator's personnel. Basically, the concern here is "are there enough competent people to do the job?"

In many cases, the Federal Aviation Regulations are specific in the requirements for certificated people, training programs, supervision, inspection authorization, etc. In other cases, personnel requirements are implied by requirements for "inspection systems," etc.

345. *FUNCTIONAL ANALYSIS AIDS.* The information in the following paragraphs describes the seven functions which may be used to assist in the analysis of the four primary areas either individually or in combination. The manner in which these seven

functions are used to analyze a particular area is at the discretion of the SWAP team leader.*

346. *PRODUCT MODIFICATION.* Product Modification is the function responsible for making alterations to a product so that it will more adequately satisfy its designed purpose. It is an integral part of the operator's total maintenance program, and is especially important in cases where deterioration of product reliability may affect the airworthiness of the aircraft.

a. *Product modification functions* are generally organized into an engineering department or a combination quality control and engineering department. Regardless of how the functions are organized, the department must be capable of properly controlling product modification. It must have competent personnel who are assigned the duties, responsibilities, and authority to make design changes and prepare necessary data and drawings including procedures and instructions necessary to accomplish the modification. Determination of the need for product modification usually originates in another area of the maintenance organization.

b. *Typical activities* which occur after the need for product modification is determined are:

(1) Evaluation and planning.
(2) Preparation of necessary data, drawings, and engineering change orders.
(3) Coordination with the product manufacturer as necessary.
(4) Parts, tools, and material specification.
(5) Preparation of procedures and instructions relative to accomplishing the modification.
(6) Followup after the product is returned to service.

c. *Many segments of the maintenance organization* must be closely coordinated in order to properly accomplish product modification. For example:

(1) A service bulletin is issued by the product manufacturer concerning a service difficulty.
(2) The analysis department furnishes the product modification function (engineering department) with appropriate data concerning service experience with the product.
(3) The service bulletin is evaluated and the decision is made to incorporate it into the aircraft fleet.
(4) The engineering department prepares necessary data including procedures and instructions.
(5) Purchasing and parts procurement department obtains the necessary parts, materials, and tools.
(6) The analysis department provides surveillance of the fleet and furnishes the product modification function with any other pertinent data.
(7) The training department may become involved if the work techniques are specialized.
(8) The production control department revises the maintenance schedules to provide sufficient time and manpower to accomplish the work.
(9) The maintenance department accomplishes the work and the inspection department performs a conformity inspection.
(10) The analysis department monitors the reliability of the product and confirms correction of the service difficulty.

This combined action completes the cycle and should provide an improved product.

d. *The analysis of this phase of the carrier's total maintenance program* considers the adequacy of the product modification organization, its authority and control, and the existence of guidelines and procedures for its proper functioning. Also considered are such factors as the competency

of its personnel and their comprehension of and adherence to the carrier's policies, standards, and procedures. The following type questions will serve as probes for analyzing the modification area:

(1) How is the need for modification changes determined?
(2) To what extent is the manufacturer's engineering service used?
(3) What manufacturer's drawings, test reports, and system analyses are readily available?
(4) What system of feedback is used to advise the engineering group of any problems encountered with the implementation of the modification by the maintenance sections?
(5) Is there a check for airworthiness of all modifications by a qualified person other than the designer? If so, who makes the check and what are his qualifications?
(6) How is the determination made as to which modifications require FAA approval? Who determines what changes require FAA approval? How are the changes requiring FAA approval handled?
(7) How are weight changes recorded?
(8) How are Engineering Orders given to shops for action? Are they easily identified as EOs? Are they so written as to be easily understood by maintenance personnel?
(9) What actions must be taken before releasing a modification for work by the maintenance department?

347. *TRAINING.* The training function is an important and distinct part of the operator's organization. It provides for the systematic development of personnel knowledge, ability, and competence in maintaining the airworthiness of aircraft. Product quality can rapidly deteriorate to an unacceptable level through lack of proper training. The development of new and complex equipment and the rapid

changes in methods of maintaining aircraft require that personnel knowledge and skills must advance commensurately. In many cases, the introduction of new equipment into service has resulted in the selection of the most experienced personnel to maintain the new aircraft. This causes the older aircraft to be maintained by less experienced personnel and can result in a deterioration of product quality. In addition, many of the older aircraft are being operated by new operators, and as a result their personnel are unfamiliar with the aircraft and its system. In each of the above cases, training of personnel is necessary.

a. *The scope of training* is dependent upon the operator's program requirements. In all cases, individuals who have the duties, responsibilities, and authority for personnel training must be properly qualified and guided by adequate procedures and instructions. Training facilities and aids must be sufficient to meet the needs of the training program. Various types of training are utilized in the development of personnel competency such as:

   (1) Formal training on new equipment.
   (2) Recurrent training.
   (3) Indoctrination of new personnel.
   (4) Specialized and product manufacturer training.
   (5) On-the-job and self-instructions.

b. *Written procedures and instructions* that are clear and understandable are an effective supplement to any of the above training methods. They can serve a definite purpose by providing the step-by-step details of properly completing the work function.

   Training programs should contain standards for instructions, schedules, course curriculum, and provisions for recordkeeping. Although all of the following points in question form do not have universal application, it is suggested that

the applicable ones be considered during the analysis of an air carrier training function:

(1) Does the air carrier have an apprentice training program? How does it work? Where is it given? How comprehensive is it? Who administers it? What methods does the operator use to determine its adequacy?
(2) Does the performance of a particular job require initial formal training? Informal training from one employee to another? Training from supervisor to employee? What training is given? How is it administered? Who gives the required training? How is its adequacy determined?
(3) Does the carrier have a formal training department? What areas does it cover? Mechanics? Inspectors? Supervisors? Management? Engineers? Where in the organization does the Training Department fit? To whom do they answer?
(4) Who schedules employees for training? Is the Training Department involved in the scheduling of employees?
(5) Who develops the training outlines?
(6) Who decides the need for recurrent training?
(7) Is training extended to contractors' employees? How does the carrier determine the need for contractors' employees training?
(8) Are there adequate training aids for technical training?
(9) Are instructors competent and able for training assigned? Who makes the competency determination? How is it made?
(10) Are there indications of lack of training? Did personnel complain on lack of training? What specific deficiencies were cited? How did you verify or disprove the allegations?
(11) Are training records maintained on each employee? Where are they kept?

348. *PRODUCTION CONTROL.*

a. Production control is a management function responsible for scheduling maintenance operations including the necessary controls to assure that work is scheduled in accordance with time limitations contained in the operations specifications and the operator's manual. It is utilized to assure that maintenance functions are scheduled in logical sequence at the proper time and at a place where competent personnel, proper parts, equipment, tools, and instructions are available to accomplish the work required by the maintenance program. Production control serves as a regulator for the maintenance cycle. It provides safeguards to prevent:

(1) Exceeding approved time limitations.
(2) Backlog accumulation of work resulting in loss of scheduled aircraft service.
(3) Errors in workmanship through unplanned and hastily performed work.
(4) Shortages in available manpower.
(5) Failures to perform the work required by the Federal Aviation Regulations.

b. Many maintenance functions are performed on a nonroutine basis. In this respect, the system for production control must be sufficiently flexible to compensate for variations in workloads and provide the necessary schedule and control to assure that the work is accomplished. Production control is also the means of coordinating the efforts of the engineering, supply, maintenance, and inspection organizations. In accomplishing its functions, production control should know:

(1) The location of the aircraft on the route and scheduled flight time.
(2) Accumulated flight time each day.
(3) Total time and time since last overhaul on time controlled parts.

(4) Types of maintenance operations to be performed and the time interval for performing each operation.
(5) Man-hours necessary to perform the operation.
(6) Manpower availability at a given time and place.
(7) Parts requiring replacement in each maintenance operation.
(8) Availability of parts, tools, and equipment.
(9) Availability of spare equipment.
(10) Output capability of all shops in the repair facilities.

c. The following questions are developed to assist in making an analysis of the production control functions:

(1) Is there a separate organizational unit responsible for the scheduling of aircraft maintenance functions? Does it include the shop scheduling of parts, components, etc.? Are all shops considered in this scheduling?
(2) To whom does the scheduling organization answer?
(3) Are there any indications of the lack of necessary ground time to accomplish required maintenance?
(4) Are there an abnormal number of carryover items due to lack of time or parts?
(5) Who schedules ADs and engineering changes?

349. *QUALITY CONTROL.*

a. Quality control is the function by which air carrier management assures that its product conforms to an established standard. While there is generally a specific organizational segment responsible for this function, the elements of quality control are inherent in every functional area of the overall maintenance organization. The quality control organization should be

responsible not only for conformity to technical standards but also for conformity to company policies and procedures. In some organizations, the actual measurements of the product quality are performed by an inspection department and the standards or the requirement to inspect are established by the quality control organization. The extent to which the quality control organization assures conformity to company policies and procedures may differ widely among various carriers; therefore, analysis of this area must be carefully and thoroughly conducted.

b. The following questions are designed to assist the analysis team:

(1) Are the instruction and standards for doing a particular job sufficiently detailed to provide the worker with the data he needs? Are they understandable and clear? Do you understand them or do they generate a feeling of need for simplification, clarification, etc.?
(2) Are instructions (manuals) readily available to employees in need of them? Are manufacturer's manuals used? Who maintains them?
(3) Are individual job cards used? Do they contain the job instructions? Are they complete and accurate?
(4) How are job cards accounted for? Is there an established system? Is it satisfactory? Who controls this accounting?
(5) How are nonroutine items handled?
(6) Is adequate housing provided to permit continuous maintenance in inclement weather? If the housing is procured by contractual or other arrangements, is it satisfactory for the type of work to be done? Is it usable? Is it in the right location?
(7) Are sufficient workstands available to examine portions of aircraft beyond normal ladder reach? Are they properly located over the carrier's route structure?
(8) Are the special tools required for the job available? Are they in usable condition? Engine overhaul? Instrument? Electrical/Electronics? Airframe repair? Accessory overhaul?
(9) Is special balancing and testing equipment available? X-ray? Magnaflux. Other?
(10) Does carrier do plating? Are the standards used for this work satisfactory? Is the work contracted? Does the contractor's equipment meet the standards set for the specific work he performs? What systems does the carrier have to ascertain the contractor has adequate instructions, tools, equipment, personnel, etc., to perform a particular job?
(11) Are individual mechanics required to have minimum tools? Are they adequate?
(12) How does carrier control the quality of fuel and oil purchases? Do they meet manufacturer's specifications?
(13) Who controls the purchasing of parts and supplies? To whom do they answer?

350. *PERFORMANCE ANALYSIS* is a function of the overall maintenance system which evaluates product performance and identifies problem areas.

a. It detects deficiencies, signals the need for corrective action, and monitors the effect of the action. It provides inputs to the engineering department to effect modification, to quality control to provide standards, to inspection to revise techniques, to production control to provide rescheduling, etc. Inherent in this activity is data collection and technical investigation.
b. Needless to say, an analysis of the procedures and control exercised by this organization and the effectiveness of their coordination with other organizational elements should be carefully considered. Following are typical questions for analysis in this area:

(1) What is the source of basic information on service difficulties? Is there more than one source? What are they? Are any useful sources being overlooked or omitted?
(2) Are there adequate instructions for completion of reports on service difficulties? Are they understandable? Are they usable? Are they followed?
(3) Is there a system for reporting difficulties encountered during operation of aircraft? During overhaul? During routine inspection?
(4) Is responsibility for reporting difficulties spelled out in sufficient detail to be meaningful?
(5) Who is this information directed to? Do they get it all?
(6) Does each department receive and analyze its own difficulties? How are upper echelons advised of how the operation is going?
(7) Are personnel analyzing difficulties capable and trained to perform this function?
(8) What is required to initiate corrective action once a problem has been identified? Is the responsibility for implementing this requirement spelled out?
(9) What use is made of industry's problems in analyzing the difficulties being experienced by the air carrier?
(10) Are fixes established based on problems being encountered by industry before they occur on the carrier being analyzed? Are MRR reports used for this purpose?
(11) Are boards of inquiry established for major problem areas such as engine failures, structural failures, etc.? Who makes up this board?

351. *MAINTENANCE PERFORMANCE.* Maintenance performance is the function generally referred to as "maintenance" and includes responsibility for actual work processes of overhaul, repair, alteration, ad-

justment, and checks of the aircraft and its systems and components.

b. The maintenance performance organization must possess capability through adequate facilities, competent personnel, practical instructions and procedures, attainable standards, and effective controls regardless of variations in size and complexity. Careful evaluation of these factors is essential to a successful analysis of the maintenance function. The following questions are directed toward making such a determination:

(1) What is the line of authority and responsibility of mechanics? What is relationship of maintenance organization to purchasing, training, inspection, engineering, and production control? Where in the organization do these segments answer to a common head?
(2) Under what condition can "maintenance" deviate from published standards?
(3) What level of supervision can fire and hire? Issue reprimands for record?
(4) What is general level of mechanic intelligence as indicated by his educational background, formal schooling, trade schools, etc.? What is mechanic expected skill level as indicated by his experience with the company and with industry? Are mechanics assigned work on a specialist's concept? How many mechanics are certificated?
(5) Are adequate tools, manuals, and facilities available?
(6) Are contract mechanics used at line stations?
(7) What is source of newly hired mechanics? Do mechanics move about system?
(8) Is there a system established by which a deficiency found by mechanics can be made known to personnel with authority for having it corrected.

352. *INSPECTION.* Inspection is the function which, through processes of examination, measurement, and test, confirms that the product conforms to established standards. The inspection department is usually a distinct segment of the carriers' overall maintenance organization. It should be unencumbered with countermanding authority from other segments or functions. Competent and adequate staffing is essential and proper tooling, equipment, facilities, and instructions are required. Close alliance or actual integration with the quality control organization is a common situation. Special attention in the analysis of the inspection function should be given to ascertain the organizational level at which it is separated from the various production functions. Typical questions for the analysis of this area are:

(1) What system has been devised by the air carrier that integrates the findings of the inspection department into the aircraft's work program?
(2) Is the inspection organization separated from the production organization? At what level does inspection and production come under a common head?
(3) What is organization set up for lower echelons? How many inspectors work for a single supervisor?
(4) How are inspectors selected?
(5) What type of maintenance checks require the services of the Inspection Department? Where are these maintenance checks conducted?
(6) Do inspectors accomplish receiving inspection? 100 percent? How are new or reworked parts selected for inspection?
(7) Is there inspection representation at contractor's facilities?
(8) What type jobs are "double inspected" by inspectors?

(9) What checks or maintenance operations are inspectors using as "work finders"?
(10) What maintenance operations are "bought back" by inspectors?
(11) What system is employed that assures a completed airplane is released to flight operations after an overhaul or heavy check has been performed? Has the system proved workable, practical, and foolproof?
(12) Do such functions as engine overhaul, instrument, radio overhaul, etc., have inspectors specializing in these areas assigned? How are they selected?
(13) What inspection responsibilities have been delegated to production personnel? How is it controlled?
(14) How is the maintenance release accomplished after overhaul? After heavy check? After a complicated component change or repair?
(15) Are personnel releasing to service propellers and instruments out of overhaul properly certificated and rated (Repairman Certificate)?

353.-399. *RESERVED.*

CHAPTER 6. AIR CARRIER OPERATIONS SYSTEMSWORTHINESS ANALYSIS PROGRAM

400. *PURPOSE.* This section provides guidance and procedural instructions applicable to the Operations Systemsworthiness Analysis Program, a subsystem within the Flight Standards Systemsworthiness Analysis Program.

401. *OPERATIONS SYSTEMSWORTHINESS ANALYSIS AREAS.*

a. *Analysis Areas.* The areas of the air carrier operations system selected for analysis are listed below. They should be scheduled to assure that all areas are analyzed at least annually. The

six areas are broken down in order to show important subareas under each which should be evaluated during analyses:

(1) *Flight Crew Training.*

(a) Training records.
(b) Quality of end product—as determined by sampling flight checks and en route inspections.
(c) Simulator training including procedural trainers.
(d) Emergency procedures training.
(e) Flight and ground instructors.
(f) Training manuals and aids.
(g) Training curriculum—Initial, upgrad- and recurrent.
(h) Differences training.
(i) Initial flight assignments—pilots and flight engineers.

(2) *Non-Flight Crew Training.*

(a) Training records.
(b) Quality of end product.
(c) Emergency Procedures Training—Flight Attendants and Dispatchers.
(d) Instructors.
(e) Training manuals and aids.
(f) Training curriculum—Initial and recurrent.
(g) Differences training—Flight Attendants and Dispatchers.
(h) Initial flight assignments—Flight Attendants and Dispatchers.

(3) *Facilities.*

(a) Communications.
(b) Dispatch and MET.
(c) Line Stations.
(d) Airports.
(e) Company-owned NAVAIDS.
(f) Flight following.
(g) Training.

(4) *Flight Operations Policies and Procedures.*

(a) Line operations.
(b) Training.
(c) Dispatch/flight following.
(d) Management control.
(e) Operational control.
(f) Manuals and bulletins.
(g) Route and airport qualification—pilots and dispatchers.

(5) *Air Carrier Records and Crew Scheduling.*

(a) Training records.
(b) Crewmember and dispatcher records.
(c) Trip papers (Load manifest, release, etc.)
(d) Operations forms.
(e) Communications records.
(f) Crew scheduling records and procedures.
(g) Financial records—commercial operators.
(h) Checklists and minimum equipment lists.

(6) *Check Airmen and Examiners.*

(a) Qualifications.
(b) Training.
(c) Quality of end product.
(d) Manuals and instruction.

b. *Preparation and Planning.* The Systemsworthiness Analysis team should first review and become familiar with the operator's policies and procedures as they pertain to the area to be analyzed and as set forth in his manuals. The objective of this review is to determine whether or not company policies and procedures are consistent with the provisions of the Federal Aviation Regulations, operating certificate, and operations specifications.

c. *Inspection Procedure.* Following this review the team determines whether or not the actual operation is in accordance with company policies and procedures, the FARs, and operations specifications by any or all of the following means:

(1) On-site inspections of facilities.
(2) Sampling en route inspections.
(3) Sampling training flights and flight checks.
(4) Discussions with the operator's personnel.
(5) Records review.
(6) Records and manual cross-checking.
(7) Verification of operational problems by checking ATS facility records.
(8) Violation review.
(9) Accident and incident review.
(10) Review of ACDO correspondence.
(11) Discussions with ACDO personnel.
(12) Financial evaluation.
(13) Checking compliance disposition and qualifications of company officials and airmen using Compliance and Security investigators, auditors, and Regional Counsel as deemed necessary.
(14) Discussions with ATC personnel and other operators.
(15) Meet with principal inspectors and local representatives of airmen organizations to discuss any items of mutual interest.
(16) Any other source of information pertinent to the analysis.

d. *Operator Policies and Procedures.* The analysis team should be able to distinguish company policy from company procedures.

(1) *Company policy* is made by top-level management, usually by the President or a senior operating official by delegation. This may vary of course depending upon the size of the company. Company policy is implemented by procedures established by company middle management officials such as

the Operations Manager, Assistant Vice President of Operations, the Chief Pilot, etc., which again will vary depending on the size of the company. A review of company policy by the analysis team could well reveal that company policy is consistent with FAA requirements, but a review of company procedures might indicate them to be contrary to company policy.

(2) *On the other hand,* both policies and procedures could be found to be in conformance with FAA requirements, where as the operator's practices are not. It is the responsibility of the operator's management to carry out company policies and procedures in accordance with regulatory requirements. If this does not result, then there is a breakdown in the operator's management system which could be due to a number of factors such as poor communications, no delegation of authority, lack of follow-up procedures, lack of supervision, or incompetent management personnel.

(3) *Sometimes it is difficult* to distinguish between policy and procedure. Reduced to the simplest terms, an operator's policy, for example, could be to comply with FAR 121, but the procedures prescribed in his manual might permit continuance of flight with certain required items of equipment inoperative.

(4) The following outline summary of the foregoing might be helpful:

(a) Company policy determined by:	Top management
(b) Company policy must be consistent with:	Regulations Operating certificate Economic authority Operations specifications

(c) Company procedures determined by:	Manuals Middle-management decisions Operational performance
(d) Company procedures must be consistent with:	Company policy Regulations Operations Specifications
(e) Company policy carried out by:	Middle management
(f) Company procedures carried out by:	Crewmembers and dispatchers

e. *Inspection Guidelines.* These guidelines are designed to give the inspector a better idea of how the systemsworthiness analysis should be conducted following the policy and procedures review by discussing several (but not all) of the subareas of the six operations analysis areas:

(1) *Flight Crew Training.*

(a) *Training Records.* The inspector should spotcheck the accuracy of the training records of individual airmen by verifying that the training was actually given on the date specified. In the case of flight training this can be done by comparison with the aircraft logbook page pertaining to the date in question. If further checking is necessary, the inspector might consider a review of flight plan information on file at Air Traffic Service (ATS) facilities or interrogation of the airmen concerned.

(b) The inspector should also determine the adequacy of the procedures used for scheduling flight crewmembers for required training and checks. If problems are encountered in this respect, the inspector should discuss the matter with the person responsible for maintainiing the training records. From this discussion the inspector should determine the source of the problem which might be due to any of the following:

1 The person in charge of the training records does not know his job either through incompetency or he himself has not been properly trained. In either case the matter must be pursued further with higher echelons.

2 Company practice not in conformance with company policies or procedures concerning company records.

3 Incorrect interpretation of regulatory requirements.

4 The recordkeeping system itself is overly complex as to preclude timely scheduling of required training and checks.

(c) *Quality of End Product.*

1 The airmen certification member of the team will conduct sampling en route inspections, observe training flights, conduct or observe a proficiency check, and conduct a type-rating check. It may not be feasible or necessary to accomplish all of these during a normal scheduled analysis which is progressing satisfactorily insofar as the operator is concerned. However, the airman certification inspector will accomplish all of these functions during special analyses of flight-crew training and during scheduled analyses if this area becomes suspect.

2 It is desirable, but not necessary, that the airman certification inspector member of the team be rated in the aircraft type when conducting en route inspections, observing training flights, or observing proficiency flight checks during either special or scheduled analyses.

However, he must be qualified and current in a comparable type aircraft. For the purpose of this handbook comparable type aircraft are:

a Any 3- or 4-engine airline jet.
b Any 2-engine airline jet.
c Any airline turboprop.
d Any airline 4-engine piston.
e Any airline 2-engine piston-tricycle gear.
f Any airline 2-engine piston-tailwheel gear.

3 In all cases where the airmen certification inspector conducts proficiency checks or type rating checks he shall be type-rated and current in the aircraft type used for such checks. In order to comply, the regions may have to temporarily detail additional airman certification inspectors to the analysis team. However, they may be released to their normal duties after briefing the analysis team concerning the results of the sampling checks. Whenever problems are encountered in any sampling check, en route inspection, or training flight, the team must trace the problem to its source, determine the cause, and take corrective action (immediately, if necessary) through the principal inspector. However, if there is no immediately safety problem, the matter should be handled after the analysis has been completed.

4 Deficiencies revealed during the sampling process might be caused by any of the following:

a The airman did not receive adequate training which in turn might be due to inadequate instruction.

b The airman is unable to remain proficient between required training periods. If this is the case, a reexamination of the airman is in order.
c It may be only a simple case of "check-itis."
d Training policies and procedures are inadequate which could either require immediate action through the principal inspector or action following completion of the analysis depending upon the circumstances.

(2) *Non-Flight Crew Training.*

(a) *Emergency Procedures — Training — Flight Attendants.*

1 The inspector during the sampling en route inspections should determine the knowledge of the flight attendants concerning emergency equipment and emergency evacuation procedures. These discussions might reveal deficiencies in the operator's training program, in which case follow-up action with the operator is required.

2 Team members should review the description in the operator's manual concerning the emergency and emergency evacuation duties assigned to flight attendants to determine compliance with regulatory requirements. Deficiencies in this area will require corrective action either immediately or after completion of the analysis, depending on the severity of the deficiency.

(b) *Training Curriculum—Flight Attendants.* Team members should determine whether the training curriculum meets the requirements for initial and recurrent training prescribed in FAR 121.424 as well as the initial and recurrent emergency procedures training

prescribed in FAR 121.416. This should be done by a review of the operator's approved training program and whenever feasible by observing classroom instruction, emergency drills, passenger briefing procedures, and by discussions with individual flight attendants. If a problem area is suspected and the operator has no classes or drills scheduled, team members should interview an appropriate member of flight attendants, instructors, as well as ACDO personnel. If a deficiency is suspected concerning emergency evacuation procedures, it might be appropriate to require the operator to conduct an emergency evacuation drill of a representative number of flight attendants. In more serious cases an emergency evacuation demonstration might be in order.

(c) *Training Curriculum—Ground Station Personnel.* Although not required by regulation, many operators conduct formal training of ground station personnel. Team members should review the training curriculum applicable to dispatch clerks and personnel computing aircraft weight and balance data. If feasible, observations should be made of classroom instruction. Perhaps the most significant aspect is the checking of load manifests for accuracy. If a problem area is disclosed with respect to the preparation of load manifests, the team should interview loading clerks and review manual instructions. The source of deficiencies in the preparation of load manifests might be:

1 Incompetence or lack of training of load clerks. In either case, the matter

should be discussed with higher echelons.

2 Inadequate instructions which should be followed up immediately if the instruction results in inaccurate load manifests.

3 Unnecessarily complex weight and balance procedures. If such results in inaccurate load manifests, immediate corrective action is required.

(3) *Facilities.*

(a) *Communications.* Determine whether company communications facilities provide adequate communications between the dispatch centers and aircraft in flight. The best and most practical ways of determining this are through personal observations during en route inspections, discussions with crewmembers, and most importantly, through discussions with working dispatchers. If deficiencies are disclosed, the team will consult with the principal operations inspector to determine the required course of corrective action. Corrective action will be initiated through the principal operations inspector either immediately or following the systemsworthiness analysis. In the latter case, the principal operations inspector should handle the matter during the post-inspection briefing of the operator.

(b) *Dispatch and MET.*

1 This area can best be handled by one, or at the most, two members of the Systemsworthiness Analysis team. This inspection should also encompass dispatch procedures which is a sub-item under the Policy and Procedures Analysis Area. The dispatch center is the

initial focal point at which all operations policies and procedures are translated into action. Prior to the inspection, it is most important that the inspector carefully review the dispatch policies and procedures prescribed in the air carrier's manual. The on-site spection should entail as a minimum a complete 8-hour shift at the dispatch center during peak periods and during IFR weather conditions if possible. The inspector should observe pilot briefings and debriefings with particular emphasis on the terms and conditions of the dispatch release. Considerable time should be spent in observing flight-following and in discussions with working dispatchers. During the visit, the inspector must carefully note whether the dispatcher function as carried out in practice is consistent with company policies and procedures.

2 The inspector should determine whether dispatcher workload has any effect on safety. In this regard, note whether dispatchers are required to perform an excess amount of non-dispatch functions such as crew scheduling, clerical duties, relaying messages, etc. Additionally, determine that dispatchers are not being required to handle too many flights.

3 Particular attention should be given to the procedures followed in the dispatch of a flight to determine whether the dispatcher is sharing responsibility with the pilot in the release of the flight considering turbulent weather conditions, information on navigation facilities, airports, and compliance with the minimum equipment list. Also, that during flight the dispatcher provides the pilot with any additional available

information which may affect the safety of the flight.

4 Determine the adequacy of the operator's system for restriction or suspension of operations in conditions that are a hazard to safe operations.

5 During visits to air carrier dispatch offices, inspectors should meet with individual dispatchers to obtain an impression of the dispatchers' knowledge of regulatory requirements and discuss mutual problems and possible solutions. Deficiencies might be caused by:

a Lack of knowledge of individual dispatchers which could be due to a lack of training or incompetence. In either case, pursue the matter further at higher echelons.

b Inadequate company policies and/or procedures. Corrective action should be initiated through the principal inspector immediately or at the conclusion of the systemsworthiness analysis as dictated by the severity of the deficiency.

c Incorrect application of regulatory requirements. In this case, immediate corrective action may be in order.

d Inadequate meterological information which again may require immediate action.

e Inadequate company communications—See subparagraph (3) (a) of this paragraph.

(4) *Flight Operations Policies and Procedures.*

(a) *Line Operations.* During the sampling en route inspection, the inspector can verify whether company policies and procedures as prescribed in the operator's manual are carried out in actual practice. For example:

1 He should determine whether the flight was properly dispatched or released

(supplemental air carriers and commercial operators). An important aspect of the dispatch/release procedure is a determination that the flight was dispatched in accordance with the applicable airplane performance requirements. This factor should be carefully examined in the case of off-route charter flights by scheduled air carriers and operations conducted by supplemental air carriers and commercial operators. The obvious question here is: If the operator has rarely or never operated into the particular airport, how does he obtain obstruction clearance data in order to comply with the take-off and landing distance requirements?

2 Particular attention should also be paid to the operator's method of complying with the "wet" runway landing distance requirements. Again this question is particularly pertinent in non-scheduled type operations.

3 It may be necessary to obtain engineering assistance in evaluating the procedure used by the operator in complying with the airplane performance requirements.

4 Deficiencies in procedures used to meet airplane performance requirements might be caused by any of the following:

a Incorrect application of regulatory requirements. In this case, immediate corrective action may be in order.

b It is more profitable for the operator not to comply. In this case, immediate corrective action is required.

c Operator's computations are incorrect. In this case, engineering assistance will be required and immediate corrective action is required.

(b) *Management Control.* This is one of the most important aspects of the systemsworthiness analysis. A good axiom is: competent management usually results in a safe operation. The person ultimately responsible for conducting a safe operation is the president of the company. Obviously, in a large company the president must delegate authority down through the chain of command. It is important, therefore, that the principal inspector, during his briefing of the Systemsworthiness Analysis team, outline the duties and responsibilities of key company officials. The guidance material contained in Section 205.c. of Chapter 4 of this handbook should be used in evaluating this area. See also Section 401.d. of this Chapter. Deficiencies in this area might be caused by:

1 *Incompetent management.* This deficiency is usually reflected in the operator's compliance and/or safety record and immediate corrective action is in order.

2 *Misinterpretation* of company policies by personnel at middle management or working level. Corrective action here might require additional training, recasting of company policy, or revision of company procedures to conform to company policy. The immediacy of the corrective action would depend upon the degree of severity.

3 *Lack of communication* down through the chain of command. This might also indicate that management is not monitoring performance at the lower management levels and initiating timely corrective action. Again, the immed-

iacy of corrective action would depend upon the circumstances.

(5) *Air Carrier Records and Crew Scheduling.*

(a) *Crewmember and Dispatcher Records.* The inspector should verify the accuracy of these records by cross-checking with other records in the manner suggested in subparagraph e.(1)(a) of this Section.

(6) *Check Airmen and Examiners.*

(a) *Quality of End Product.* The inspector should review the flight-checking records of company check pilots to determine whether certain check pilots either give a high percentage of down checks or never give a down check. These records should be compared with those flight checks conducted with an FAA inspector on board. Any significant differences in the percentage of down checks between individual check pilots, company check pilots and FAA inspectors; or individual FAA inspectors must be resolved. If a significantly high or low percentage of down checks is apparent it is apparent it might be caused by:

1 If high, company training program may be inadequate. In such a case immediate corrective action is in order.

2 If high, company check pilots or FAA inspector are demanding too much, e.g., compounding emergencies.

3 If low, could well be due to an excellent training program. In such a case, the inspector should note the good features for his own education and future reference.

4 If low, check pilots too lenient, thus immediate corrective action is required.

402. *CORRECTIVE ACTION.*

a. When corrective action is required during or subsequent to the systemsworthiness analysis, it normally will be initiated with the operator through the principal inspector. The team will only initiate corrective action when required by unusual circumstances, or if directed to do so by higher authority.

b. In considering corrective action it goes without saying that no distinctions will be made with respect to the class of operator involved. Except for regulatory requirements pertaining to dispatch, communications, and pilot route and airport qualifications; a small commercial operator or supplemental air carrier must comply with the same safety standards that are applicable to a large scheduled air carrier. Further, the identical standards applicable to supplemental air carriers and commercial operators are also applicable to off-route charter flights conducted by scheduled air carriers.

403.-499. *RESERVED.*

CHAPTER 7. GENERAL AVIATION SYSTEMSWORTHINESS ANALYSIS

SECTION I. IMPLEMENTATION

500. *PURPOSE.* This section provides guidance and instructions for implementation of the General Aviation Systemsworthiness Analysis Program.

501. *SCOPE.* Systemsworthiness Analysis methods are applicable when it can be expected that:

a. A higher level of safety can be achieved.
b. Greater efficiency in the utilization of manpower can be realized.
c. Presently scheduled surveillance inspections can be appreciably reduced.
d. Closer standardization can be attained.
e. Faster detection and correction of deficiencies may be provided.

502. *PLAN.* Implementation will be accomplished on a gradual and orderly basis in three phases.

503. *PHASE I.* Phase I begins October 1, 1969, by which date it is expected that each region will have personnel selected for temporary team assignment, a temporary schedule established, and be ready to conduct general aviation systemsworthiness analysis.

a. *Team organization.* Team organization in regard to size, composition, supervision, location, and structure will be the prerogative of each regional director. In any case, however, the SWAP function will be responsive to the regional Flight Standards Division Chief.

b. *Transfor of work function.* Since Phase I will be a gradual buildup of effort and effectivity, transfer of inspector work functions either partially or completely to the SWAP team will be determined by each region based on its own particular circumstances.

504. *PHASE II AND III.* Phase II and III instructions will be provided at a later date.

505-509. *Reserved.*

SECTION 2. GENERAL AVIATION MAINTENANCE AND OPERATIONS

510. *ANALYSIS PROCESS.* The General Aviation activities which are adaptable to SWAP, such as air taxi and commercial operators, certificated repair stations, and airmen schools, all have certain basic similarities which may be used for separating and scheduling the analysis function into four primary areas.

a. Standards and Procedures.
b. Quality Assurance.
c. Equipment and Facilities.
d. Personnel and Training.

Each area can generally be associated with regulatory requirements for the various aviation functions to which SWAP will be applied.

511. *GENERAL.* Guidance material is provided in the following paragraphs to assist SWAP team members in their analysis of various kinds of general aviation activities.

a. *Standards and Procedures.* This basic area includes the operator's system for establishing what he is going to do and how he is going to do it. Where manuals are required by regulation, this is the area which includes responsibility for their publication, accuracy, adequacy, distribution and revision status. This area also includes the operator's system for establishing and disseminating policy and guidelines for management decisions affecting flight safety and airworthiness. Since this area constitutes management's communication network, close attention should be given to the structure, responsibilities, staffing, and facilities.

In analyzing this area, it is important to bear in mind that individual discrepancies are usually indicators of system breakdown. When manuals are found with obsolete pages, SWAP should be concerned with the lack of management control which allowed this condition to exist. SWAP should be alert to situations where responsibilities and authority in regard to airworthiness determinations, etc., are not clearly delineated. Where procedures for work performance, inspection, testing, etc., are inadequate or erroneous, SWAP should be concerned with the qualifications, staffing, supervision, and control of the people and system which produce the procedures. The following type questions will serve as probes for analyzing the standards and procedures area:

(1) What manuals and other written policy, information, and procedural material is provided by the operator?
(2) Who is responsible for the development, preparation, and distribution of the material?
(3) Is there a method for feedback to indicate the adequacy of the existing instructions, that they are understood, that they are correct? Does the feedback system show where policy definition is needed?
(4) Is authority for deviation from policy clearly spelled out?
(5) Is published material made available to all the working levels? Is it legible? Properly revised?

b. *Quality Assurance.* This basic area includes all functions and activities directed toward assuring that work performed and services rendered are done so in accordance with the operator's policies, procedures, instructions, and in accordance with the applicable federal regulations. This includes the system by which the operator assures that its product conforms to an established standard. "Product" here is used in its broad sense. "Product" may mean an overhauled component, an installed modification, a trained airman, a repaired aircraft, etc.

A specific organizational segment may be responsible for this function. These units may be called a student review board, an inspection department, quality control department, technical compliance, etc. Regardless of the product and of how formally structured this function is, the basic essentials are the same. Some considerations are:

(1) Does the system assure that work or service is performed in accordance with the operator's standards? Is there feedback to determine if these standards are adequate?

(2) Does the system assure that proper tools are used, competent people are employed, adequate instructions are available, required records are kept, adequate supervision exists, etc.?
(3) Does the system provide for personnel safety and working conditions?
(4) Does the system develop test procedures? Are the tests valid? Are the results fed back as indicators of procedural, personnel, or equipment deficiencies?
(5) Does the system provide for traceability of items requiring calibration; how is this controlled? What standard is used?
(6) Where is the separation between quality control, inspection, and management? At what level does production and inspection separate?

c. *Equipment and Facilities.* This analysis area includes those organizational elements responsible for providing tools, classrooms, materials, shops, supplies, parts, and any other article or commodity, except people, used in the operator's "production" process. This function is also responsible for maintaining the condition and adequacy of these "production tools." Where the previous two areas have been concerned with "what is done" and "how well it is done," this area assures the wherewithall to actually do the job. Analysis in this area should consider:

(1) Do the facilities and equipment meet the regulatory requirements? Who is responsible?
(2) How is the need determined for equipment such as shop tools, training aids, spare parts, safety equipment, copies of manuals, torque wrenches, mockups, etc.?
(3) In the case of flight and mechanic schools, who assures the adequacy of classrooms, texts, materials, shop equipment?

(4) Who assures that the equipment is maintained and available?
(5) Where operators make use of aircraft as in the case of an air taxi and flight schools, are the maintenance arrangements adequate? How does the operator know?
(6) Are recordkeeping provisions adequate?
(7) Is there an organizational element responsible for work scheduling? Does the system assure that required inspections are accomplished on time?

d. *Personnel and Training.* This very important analysis area encompasses the total human element. It is concerned with both the quantity and quality of people. It includes availability, qualifications, competency, certificate requirements, direction, and training of the operator's personnel. Basically, the concern here is "are there enough competent people to do the job?"

In many cases, the Federal Aviation Regulations are specific in the requirements for certificated people, training programs, supervision, inspection authorization, etc. In other cases, personnel requirements are implied by requirements for "inspection systems," etc.

Some considerations in the personnel and training area are:

(1) Does the operator's training program meet the intent of the regulations?
(2) Is there a system for recording employee's qualifications and training?
(3) Is there a feedback system to indicate need for training, need for additional personnel, need for changes in supervision?
(4) Is on-the-job-training conducted by qualified persons?
(5) Where in the organization does the training department fit? To whom does it answer?

(6) Are there provisions for recurrent training?
(7) Are there provisions for non-technical training to upgrade supervision, instructors, manual writers, etc.?
(8) Is there an orientation program for new employees? Any provisions to acquaint employees with federal regulations?
(9) Are there sufficient personnel to accomplish the work functions? Are they provided sufficient time to properly accomplish inspections, troubleshooting, and to execute adequate records?
(10) Are there duty time limitations? To what extent do the employees moon-light? What is operator's policy regarding moon-lighting?

512. *SUMMARY* The preceding paragraphs are intended only as guides. Analysis should not be confined to just these considerations. Reference should also be made to the air carrier analysis guidelines and procedures in Chapters 5 and 6 for additional guidance as applicable especially where an ATCO operation under Part 135 is involved. Team experience, however, will be the best indicator of the "what, where, and how" of Systemsworthiness Analysis.

513.-519. *RESERVED.*

AIR TRANSPORT ASSOCIATION OF AMERICA
1000 Connecticut Avenue, N.W.
Washington, D.C. 20036

December 4, 1970

Mr. George S. Moore
Associate Administrator for Operations
Federal Aviation Administration
800 Independence Ave., S.W.
Washington, D.C. 20590

Re: Public Disclosure of Systemsworthiness Analysis Program (SWAP) Findings

Dear Mr. Moore:

The airline members of the Air Transport Association strongly urge that no public disclosure be made of Systemsworthiness Analysis Program (SWAP) findings. To that end, we hereby request the Administrator to issue an order, pursuant to Section 1104 of the Federal Aviation Act of 1958, directing that SWAP information be withheld from public disclosure.

As has been set forth by the FAA in a memorandum to its regions dated February 7, 1967, "The SWAP Program requires a cooperative effort on both the part of the company and FAA if it is to work effectively." Information freely given to the FAA SWAP team by air carrier management personnel is not specifically required by the FAR's.

If public disclosure of the SWAP reports were made, the interests of aviation safety would be in danger of being subordinated in some degree to legal considerations in the presentation of information to the FAA. The present practice of non-public submissions, which includes even tentative findings and opinions as well as certain factual material, encourages a spirit of openness on the part of airline management which is vital to the promotion of aviation safety—the paramount consideration of airlines and government alike in this area.

It is submitted that any negative influence on our continuing program to improve aviation safety would by definition adversely affect the interests of the airline members of the Air Transport Association and be manifestly contrary to the public interest. Therefore, we respectfully request that SWAP reports be withheld from public disclosure.

Attached is a list of ATA members which have authorized us to make this request in their behalf.

Sincerely,

(Signed) Clifton F. von Kann
CLIFTON F. VON KANN
Senior Vice President
Operations and Airports

Attachment
bcc: Mr. George U. Carneal-
General Counsel—FAA

Air West, Inc.
Alaska Airlines, Inc.
Allegheny Airlines, Inc.
Aloha Airlines, Inc.
American Airlines, Inc.
Braniff International
Continental Air Lines, Inc.
Delta Air Lines, Inc.
Eastern Air Lines, Inc.
The Flying Tiger Line, Inc.
Frontier Airlines, Inc.
Hawaiian Airlines, Inc.
Mohawk Airlines, Inc.
National Airlines, Inc.
New York Airways, Inc.
North Central Airlines, Inc.
Northeast Airlines, Inc.
Northwest Airlines, Inc.
Ozark Air Lines, Inc.
Pan American World Airways, Inc.
Piedmont Airlines, Inc.
Reeve Aleutian Airways, Inc.
Southern Airways, Inc.
Texas International Airlines, Inc.
Trans World Airlines, Inc.
United Air Lines, Inc.
Western Air Lines, Inc.
Wien Consolidated Airlines, Inc.

DETERMINATION NOT TO RELEASE SYSTEMSWORTHINESS ANALYSIS PROGRAM REPORTS

By letter dated 4 December 1970, the Air Transport Association of America requested, on behalf of 28 of its member airlines listed below, that the Systemsworthiness Analysis Program (SWAP) Reports relating to those airlines should not be disclosed to the public. Having considered this request, I, John H. Shaffer, pursuant to the authority granted to me as Administrator of the Federal Aviation Administration by Section 1104 of the Federal Aviation Act of 1958 (49 U.S.C. 1504) and the delegation to me by the Secretary of Transportation (49 CFR 1.47(a)), hereby determine that Systemsworthiness Analysis Program Reports shall be withheld from public disclosure. In my judgment, the disclosure of the information contained therein would adversely affect the interests of the airline being investigated and is not required in the interest of the public. This determination is effective for all SWAP reports in existence or hereinafter to be made, regarding the following listed airlines who have authorized the Air Transport Association of America to request non-disclosure:

Air West, Inc.
Alaska Airlines, Inc.
Allegheny Airlines, Inc.
Aloha Airlines, Inc.
American Airlines, Inc.
Braniff International
Continental Air Lines, Inc.
Delta Air Lines, Inc.
Eastern Air Lines, Inc.
The Flying Tiger Line, Inc.
Frontier Airlines, Inc.
Hawaiian Airlines, Inc.
Mohawk Airlines, Inc.
National Airlines, Inc.
New York Airways, Inc.
North Central Airlines, Inc.
Northeast Airlines, Inc.
Northwest Airlines, Inc.
Ozark Air Lines, Inc.
Pan American World Airways, Inc.
Piedmont Airlines, Inc.
Reeve Aleutian Airways, Inc.
Southern Airways, Inc.
Texas International Airlines, Inc.
Transworld Airlines, Inc.
United Air Lines, Inc.
Western Airlines, Inc.
Wien Consolidated Airlines, Inc.

(signed) John H. Shaffer
John H. Shaffer
Administrator
Federal Aviation Administration
Washington, D.C. 20590

(dated) 18 Feb. 1971

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

Civil No. 1970-71

REUBEN B. ROBERTSON, III, ET AL., PLAINTIFFS

—*v*—

JOHN H. SHAFFER, ET AL., DEFENDANTS

STATEMENT OF GENUINE ISSUES

Plaintiffs respectfully submit that genuine issues exist as to assertions of fact and conclusions of law contained in paragraphs 7, 8, 11, 12, 13, 16, and 17 in the Affidavit of Defendant Shaffer concerning the SWAP Reports and paragraphs 8, 10, 11, 13, 14, 15, and 17 through 22 of the Affidavit of Defendant Shaffer concerning MRRs.

James R. Michael
1237 - 22nd Street, N.W.
Washington, DC 20037
(202) 785-0797 OR (202) 833-3400
Attorney for Plaintiffs

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

Civil No. 1970-71

REUBEN B. ROBERTSON, III, ET AL., PLAINTIFFS

—*v*—

JOHN H. SHAFFER, ET AL., DEFENDANTS

PLAINTIFFS' STATEMENT OF MATERIAL FACTS AS TO WHICH THERE IS NO GENUINE ISSUE

The material facts as to which there is no genuine issue are stated in Government's Admissions of fact and genuineness of documents (Nos. 1-135) filed heretofore in this action, which have been made upon demand by Plaintiffs pursuant to Rule 36 of the Federal Rules of Civil Procedures, and in those paragraphs of Defendant Shaffer's affidavits on MRRs and SWAP Reports which Plaintiffs do not contest, and in the Affidavit of Plaintiff Robertson submitted in support of Plaintiffs' motion for summary judgment, and are incorporated herein by reference.

James R. Michael
1237 - 22nd Street, N.W.
Washington, DC 20037
(202) 785-0797 OR (202) 833-3400
Attorney for Plaintiffs

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

Civil Action No. 1970-71

REUBEN B. ROBERTSON, III, ET AL., PLAINTIFFS

v.

JOHN H. SHAFFER, ET AL., DEFENDANTS

RESPONSE TO PLAINTIFFS' STATEMENT OF MATERIAL FACTS AS TO WHICH THERE IS NO GENUINE ISSUE

Federal defendants believe that, on their statement of material facts, as properly supported under Rule 56, they are entitled to summary judgment. There is no issue as to any material fact that would stand in the way of summary judgment for the federal defendants.

With that preliminary observation, we have the following response to plaintiffs' statement of material facts.

1. Plaintiffs' refer to the "Government's Admissions of fact and genuineness of documents." Plaintiffs filed their requests *after* they filed a motion stating that there is no genuine issue of material fact and seeking judgment. It is extraordinary that plaintiffs now claim that matters as to which they requested admission only subsequent to making their motion, are material to their motion.

2. The Federal defendants have asked the Court to stay discovery, so that they need not answer or object specifically to plaintiffs' discovery at this time, including the request for admissions. Accordingly, we cannot accept the requests for admission as stating material facts.

3.A. With respect to plaintiff Robertson's affidavit we do not accept it as correctly stating material facts in this case to the extent it: states matters not shown to be within Mr. Robertson's personal knowledge; states matters contradicted by properly supported materials submitted by federal defendants; relies on materials not shown to have been properly made part of the record in

this case. For example, in paragraph 3, the Robertson affidavit, in referring to matters "required to be reported" fails to refer to the discretionary category of MRRs. See paragraph 6, Shaffer affidavit. Paragraph 4 states Mr. Robertson's opinions concerning MRRs. We do not accept this paragraph as stating material facts in this action. Moreover, we note with regard to this paragraph, that this case involves withholding of MRRs submitted on or before February 18, 1972, and MRRs submitted after that date in open status. Mr. Shaffer has stated: Often MRRs contain raw unanalyzed data concerning the malfunction. Because of the time-critical reporting requirement [49 CFR 121.703(d)], the information is often incomplete or based upon a preliminary investigation. It would be very misleading for the public to receive this raw unevaluated data. Par. 8. The use to which Mr. Robertson states he would put MRR information—and he does not exclude *open* MRR information—underscores the validity of Mr. Shaffer's judgment under Section 1104 as to the public interest.[1]

B. With respect to Mr. Robertson's paragraph 5, the federal defendants respectfully refer the Court to the government's papers for a precise statement of distribution of MRRs. See, e.g., Shaffer affidavit on MRRs, paragraph 21. We do not accept plaintiffs' paragraph 6. For example, the second sentence is stated to be on information and belief and is contradicted by Mr. Shaffer. Paragraph 17, SWAP affidavit.

C. We do not accept as material facts Mr. Robertson's assertions in paragraph 5 that he attaches a "typical" MRR daily summary; or his assertion in paragraph 6 that he attaches "excerpts from a typical SWAP report"

---

[1] Paragraph 4 is also subject to the defect that Mr. Robertson's statement of opinion does not suggest awareness of the fact that an airline's MRR history may reflect a liberal approach to reporting rather than a maintenance problem. His statement of opinion would seem to suggest to airlines that they keep their number of MRRs down, to have the *appearance* of being safe. Mr. Robertson's opinion does not seem conducive to air safety.

and that this excerpts demonstrate the nature and purposes of these reports.[2]

/s/ _____
HAROLD H. TITUS, JR.
United States Attorney

/s/ _____
JOSEPH M. HANNON
Assistant United States Attorney

/s/ _____
NATHAN DODELL
Assistant United States Attorney

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that service of the foregoing Federal Defendants' Reply Memorandum Affidavit of Robert K. Snyder, Handbook 8000.3C and Response to Plaintiffs' Statement of Material Facts have been made upon plaintiffs by mailing a copy thereof to their attorney, James R. Michael, Esq., 1237 - 22nd St., N.W., Washington, D.C. 20037, and upon co-defendant by mailing a copy thereof to its attorneys, George W. Wise, Esq., Timothy J. Bloomfield, Esq., and David B. Lytle, Esq., 815 Connecticut Ave., Washington, D.C. 20006, on this 11th day of July, 1972.

/s/ _____
NATHAN DODELL
Assistant United States Attorney

[2] The SWAP reports are received by FAA on the basis that they will not be disclosed to the public. The MRRs have been received by FAA on the basis of a limited, specific distribution. In our view, in these circumstances, plaintiffs have not properly made these documents part of the record, without benefit of any ruling by the Court.

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

Civil No. 1970-71

[Filed Dec. 12, 1972, James F. Davey, Clerk]

RUEBEN B. ROBERTSON, III, ET AL, PLAINTIFF

vs.

JOHN H. SHAFFER, ET AL, DEFENDANT

NOTICE OF APPEAL

Notice is hereby given this 12th day of December 1972; that Defendants hereby appeals to the United States Court of Appeals for the District of Columbia from the judgment of this Court entered on the 8th day of November, 1972 in favor of plaintiffs against said defendants

Harold H. Titus, Jr.
United States Attorney

William A. White
Assistant United States Attorney

Allan B. Morrison, Esq.
2000 P St., N.W., Suite 515
Washington, D.C. 20036

ORDER 8000.3C

SYSTEMSWORTHINESS ANALYSIS PROGRAM

[F.A.A. Seal]

14 Apr 1972

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

Distribution: WRCMFS-3; FFS-1, 2, 3, 5 & 7 (all employees) Initiated by: FS-320 FIA-O (minimum); AC-955 (80 copies)

FOREWORD

1. *PURPOSE.* This order sets forth the Systemsworthiness Analysis Program (SWAP) as a function of the Flight Standards Service and provides guidance with respect to the following; organization, staffing, coordination, and control of the Systemsworthiness Analysis System.

2. *DISTRIBUTION.* This order is distributed to Flight Standards branch level and above in the headquarters, regions, and Aeronautical Center; to all General Aviation, Air Carrier, Engineering and Manufacturing, and Flight Standards District offices; and to all International and International Aviation Field offices.

3. *CANCELLATION.* Handbook 8000.3B, dated 7/23/69, is cancelled.

4. *PROGRAM RESPONSIBILITY.* The Flight Standards Service is responsible for the overall management of SWAP and shall provide policy, organization, suitable staffing, help and information, sources of help and information, time schedules, and reporting procedures. Each Regional Director and the Assistant Administrator, European Region shall utilize the program in accordance with this revised order.

5. *RESPONSIBILITY FOR ORDER PREPARATION AND AMENDMENT.* The Flight Standards Service is responsible to develop and issue on behalf of the Administrator, National SWAP Policy, standards, plans, goals, suitable staffing, and procedures consistent with that policy. The Maintenance Division, FS-300, is responsible for editing, coordination and clearing the proposed changes with cognizant divisions.

6. *BACKGROUND.* The Flight Standards Systemsworthiness Analysis Program (SWAP) is a systems approach to the conduct of agency responsibilities for the evaluation of commercial aviation opera-

tors. Recognizing that commercial aviation safety is only as good as the management system which produces it, SWAP provides the FAA with an in-depth analysis of these management systems.

7. *PUBLIC AVAILABILITY OF INFORMATION.* This order is in no way restricted, and the employee to whom it is issued will make it available for review by the public upon request. Copies of this order may be obtained (for a nominal fee) by written request to the:

Manager of Headquarters Operations
Department of Transportation
Federal Aviation Administration
800 Independence Avenue, S.W.
Washington, D.C. 20591

/s/ J. A. Ferrarese
Acting Director, Flight Standards Service

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CHAPTER 1. POLICIES AND OBJECTIVES

1. *GENERAL.* The Flight Standards Systemsworthiness Analysis Program is a systems approach to fulfill agency responsibilities for inspection and surveillance of operations having formalized systems that cannot be monitored effectively using customary surveillance techniques. It is aimed at determining the casual factors which allow a system to deteriorate rather than the symptoms that are a result of such deterioration. The task of the SWAP team is to supplement the process of surveillance with an indepth analysis of operators' systems and subsystems to determine if system objectives are being achieved. SWAP augments the district office (D.O.) permitting the principal inspector to maintain surveillance of the overall posture of the operator. The key features of the Systemsworthiness Analysis Program are:

   a. *Modifying maintenance and operations surveillance inspection practices* to a comprehensive systemsworthiness concept in order to effect better utilization of district office inspector personnel.
   b. *Utilizing teams of inspectors* to perform programmed and special inspections, to relieve district office inspectors from doing necessary and time consuming indepth analysis.
   c. *Employing sophisticated analytical techniques* on performance and reliability data to better point inspection efforts toward critical areas.
   d. *Defining the relationship and roles of the SWAP and district office inspector* as related to systemsworthiness analysis activities.

2. *MAJOR POLICY OBJECTIVES.* The objectives of the Systemsworthiness Analysis Program are to:

   a. *Provide more efficient* utilization of inspector personnel, both D.O. and SWAP.
   b. *Provide an accurate and penetrating* analysis of all components of the operators' systems.

c. *Improve the quality* of FAA inspections of air carriers, commercial operators, air travel clubs, air taxi operators, repair stations, airmen schools, and other appropriate industry segments.
d. *Improve the effectiveness* of primary agency representatives in the district office.
e. *Reduce* to the maximum extent practicable, in-depth inspections by district office inspectors assigned to an operator to permit these inspectors to maintain surveillance of the overall posture of the operator to determine any sensitive areas which may require examination by the SWAP team.

3. *PROGRAM EFFICIENCY QUALITY.*

a. *More Efficient Utilization of Inspector Personnel*:

(1) By concentrating on significant safety defects, thus getting more out of our safety efforts.
(2) Minimizing frequency of inspections on operators performing satisfactorily.
(3) Permitting flexibility in the deployment of inspectors.
(4) Avoiding inspections by the numbers.
(5) Permitting across-the-board use of scarce technical skills.

b. *Effective Detection and Correction of Defects By*:

(1) Using proven analytical techniques on operator installed systems required by FAR such as MRR, MIS and others.
(2) Conducting periodic systemsworthiness analysis indepth which provides a systematic method for disclosing defects in operations and maintenance programs, determining probable causes and recommending positive alternatives and methods of correction or control.
(3) Allowing principal inspector freedom to more effectively monitor his overall assignment.

c. *Improving Quality and Timeliness of FAA Inspections*:

(1) By using modern systems analysis techniques.
(2) The Systemsworthiness Analysis Program broadens technical competence of FAA inspectors by exposing them to a number of various management systems.
(3) By placing inspector manpower on defective areas of greatest need.

4.-49. *RESERVED.*

CHAPTER 2. ORGANIZATION

50. *MISSION AND FUNCTIONS.* SWAP teams are established as an element to the Flight Standards Division/Staff to perform indepth analyses of commercial aviation operators. The product of the team effort is a report of findings and recommendations and is provided to the air carrier/general aviation district office chief and/or principal inspectors who have responsibility for determining what corrective action is to be taken. To the extent practicable, each region will conduct systemsworthiness analysis of assigned operators on a systemwide basis.

51. *STRUCTURE.* A SWAP team should be established in each region. Regions that do not have an FAR 121/123/127 operator that is subject to a SWAP inspection shall not establish or continue an air carrier SWAP organization. Team members will be responsible to a chief as determined by regional organizational flow chart.

52. *SELECTION PLACEMENT AND DEVELOPMENT OF SWAP INSPECTORS.* Since the success of the Systemsworthiness Analysis Program depends in no small part on the quality of the personnel selected, particular attention should be given to the choice of the team members. In addition to the basic experience and technical qualifications required of an inspector, the following is considered essential:

Basis of Selection.

a. Broad technical training and experience.
b. Indoctrinated in the techniques of Systems Analysis.
c. Demonstrated ability to analyze systems effectively.
d. One year experience in a D.O. at the journeyman level.
e. Demonstrated ability to communicate effectively including oral and written presentation.

53. *PHYSICAL LOCATION.* Each regional director, or the Assistant Administrator, European Region, having certificate responsibility, shall determine the location(s) of the SWAP team(s) based on the location of major workload, facilities, travel and per diem requirements, etc. The use of split teams is a prerogative of the regional director and is recommended where efficiency, expenses, team morale, etc., are significant factors.

54. *TEAM COMPLEMENT.* The size and makeup of the team required to perform a scheduled or special analysis will vary depending on the number of functional areas to be covered, the size and complexity of the operator, etc. Team assignments and scheduling are the responsibility of the Chief, Systemsworthiness Analysis.

55. *ORGANIZATIONAL RELATIONSHIP OF SWAP TEAM TO DISTRICT OFFICE.* The team will support the district office by providing reliable reports of facts, analysis and conclusions. The reports are designed to aid district office personnel in their decision making processes.

56. *RECOMMENDATIONS FOR REGULATORY CHANGES.* The SWAP team is in an excellent position for detecting the need for amendments to the FARs. Team members are encouraged to submit proposed changes to the FARs by separate letter to the Regional Chief, Flight Standards Division/Staff for further forwarding to Washington headquarters.

57.-99. *RESERVED.*

CHAPTER 3. HOW SYSTEM FUNCTIONS

100. *SCHEDULED SYSTEMSWORTHINESS ANALYSIS.* Tentative schedule of inspections will be prepared by SWAP covering at least a six-month period and distributed to the district offices.

This schedule will identify the name, address, type of certificate(s) and inspection date of each operator involved. It will also include a procedure whereby necessary coordination between the district office and SWAP is accomplished during the two-week period preceding each inspection.

Every effort will be made to adhere to the published inspection dates. They will be considered firm and changed only after serious consideration and full coordination between SWAP and the district office concerned.

101. *SPECIAL SYSTEMSWORTHINESS ANALYSIS.* Special systemsworthiness analysis will be conducted on an as-needed basis and may be requested by Washington headquarters, the regional office, or district office whenever there are indications that the performance of a particular operator is falling below an acceptable level. The procedures employed are the same as those followed in a scheduled analysis, except that the analysis is concentrated on those areas of operators' systems that are suspected of being deficient. Some conditions that would warrant a request for a special analysis are adverse trends in:

a. *Accidents and incidents.*
b. *Violations and complaints.*
c. *Financial condition.* Some examples of indications of financial stress that can be detected by inspectors are:

(1) Demands for "cash on delivery" by suppliers who formerly allowed credit.
(2) Curtailment of flight operations.
(3) Significant layoff of personnel.
(4) Significant employee turnover.
(5) Delays in meeting payrolls.
(6) Sale or repossession of aircraft.
(7) Inadequate maintenance of aircraft.

h. Any other factors that could adversely affect the operators' performance or be of assistance to the teams.

104. *OTHER BRIEFINGS.* The inspection team will have free access to manuals, correspondence, and records pertaining to the operator, and any other appropriate data maintained by district offices. All material and data pertinent to the inspection will

be studied by the team to acquaint them with the operator's policies, instructions, and procedures. It is essential that the team has a good working knowledge of the operator's management policies and procedures applicable to the area to be investigated before they meet with the operator. In this manner, the team will be better equipped to discuss intelligently the policies and procedures used by the operator in the direction and control of his enterprise.

105. *INITIAL MEETING WITH THE OPERATORS.*

a. *The district office chief or principal inspector shall arrange* for and chair the initial meeting of the inspection team and the operator. He will explain the purpose and scope of the inspection. In cases where a problem area is suspected to exist, it should be frankly discussed with the operator. This straight-forward approach will help to foster a feeling of mutual trust and respect that is beneficial, if not essential, to the analysis. At this time, the operator will be advised that he will be informed of the team's findings at a meeting to be arranged by the district office at the conclusion of the inspection. The operator should be invited to stipulate any special areas that he would like the team to examine.

b. *The operator should also* be advised that experience has shown that rumors relating to FAA findings while the inspection is in progress are not unusual and should be disregarded. Such rumors usually stem from the searching nature of the questions posed by members of the team. Team members will normally not discuss findings with the operator's personnel during the onsite inspection. However, if a serious safety problem is disclosed during the inspection, the operator and the district office will be informed immediately by the SWAP team of the facts available so that prompt corrective action can be taken.

106. *THE SYSTEMSWORTHINESS ANALYSIS PROCESS.*

a. *As an essential preliminary*, each team member will familiarize himself with the operator's policies, organization, reporting system (records), and directives which govern the particular area to be analyzed. During the review and analysis, the team member should make notes and references to serve as memory-joggers during the inspection. This will minimize the need for subsequent research manuals, records and files to ascertain a specific practice or directive.

(b) Past inspections have revealed extremely cumbersome or impractical airman records systems. In those cases, inspections have disclosed violations of flight time limitations or faiure to schedule crewmembers for required recurrent training. Past inspections have also disclosed areas where procedures were needed, but none were provided.

(c) It is imperative that the operator has established adequate procedures to monitor compliance with company policy and FAR requirements.

(3) *Fraudulent Records.* When the team suspects that the operator is falsifying his records, assistance by regional Air Transportation and Security, Audit and Legal personnel may be necessary.

(a) A simple cross-checking of company records may reveal discrepancies such as checking aircraft logbooks against training records.

(b) Another technique successfully used in the past has been to check flight plan information available in ATS facilities against company records.

(4) *The art of asking the right question* at the right time and of the right person is one of the key attributes of a successful systemsworthiness ana-

lysis. This art should be employed continuously by team members during an inspection, since it serves to expose abstract areas, confirms or disproves adherence to the established systems, and provides an insight into the acceptance and applicability of established policies and procedures.

d. *Team members* should not confine their inquiries to any particular group of personnel or organizational level. It may be anticipated that supervisory personnel ought to be well-versed in the policies, organization and procedures governing the work functions for which they are responsible. However, they may be unaware of trouble spots existing at lower echelons or shortcuts taken at the working level that may adversely affect compliance with the regulations and accepted standards of safety.

107. *POST-INSPECTION MEETING WITH THE OPERATOR.* The district office chief or the principal inspector shall arrange for, and serve as, agency spokesman in the post-inspection meeting with the operator. All findings discussed at the meeting must be fully supported by facts acquired by the team. However, the operator should be given ample opportunity to present additional facts which he feels mitigate defects found by the inspection team.

108.-199. *RESERVED.*

CHAPTER 4. REPORTING

201. *PRELIMINARY REPORT.* A preliminary report will be prepared by the team following completion of the inspection. This report must be a clear, concise and factual record of the team's findings and discussion. (Section C of the final report format as discussed in this handbook.) The preliminary report may also include other sections of the final report format at the option of the team. Following the SWAP debriefing of the district office, and subject to any changes, the findings and discussion

portion will be contained in the final report. The findings and discussion portion only of Section C may be transmitted to the operator for his official notification.

202. *REPORT OF SYSTEMSWORTHINESS ANALYSIS (RIS: FS 8000-3).*

a. *THE SWAP team report* transmits the findings and recommendations developed during the inspection. It must be so written that the reader understands it, is satisfied that all information has been included, and feels confident that findings are supported by facts. The report should be positive and persuasive rather than negative and fault finding. It should deal in specifics rather than generalities.

b. *Final Report Format and Content.*

(1) *Section A—Foreword.* This section should contain the information concerning the basis upon which the inspection was conducted, what guidelines were followed, and what techniques were used.

(a) *The opening statement* should spellout whether the inspection was regularly scheduled or was the result of a special request. This section should also identify the areas inspected and list the names and titles of Systemsworthiness team members conducting the inspection.

(b) *The last entry on this page* should establish the starting and ending date of the inspection. Normally, the starting date would be the first day the team conducted business at the operator's facilities. The ending date is the date that the team departed the operator's facilities and not the date that the report was completed.

(c) *The Foreword* will normally be limited to one page.

(2) *Section B—Analysis Summary.* The analysis summary should convey to the reader the overall state of health of the operator's major systems inspected.

(a) *During the SWAP inspection,* an analysis is made to determine the effectiveness of related portions of many different systems, policies and procedures used by the operator. The substance of the report (findings) primarily reflects the cause and effect of a breakdown in these various systems and, as such, are critical or subjective in nature.

(b) *It is, therefore, necessary when writing the summary* to utilize the major findings contained in the report and place them in descending order of importance in order to convey a valid picture of the OVERALL status or condition of the operator. If it is found that the operator's systems appear to be effective in conducting their various programs, SAY SO.

(c) *In brief, each or all SWAP findings* in the report should be analyzed in order to determine and consolidate the operator's basic deficiencies, and particularly to HIGHLIGHT PRIMARY CAUSES and effects, such as:

1 Operator's procedures and instructions for systems operation are in need of improvement.

2 The operator's systems procedures and instructions are in need of improved managerial control.

3 Insufficient followup by managers to insure that company policies and procedures are being followed.

(d) *The last portion of this section will* reflect or summarize the net effect that

the deficiencies noted during the inspection have or will have upon economy and safety, the operator, his aircraft, and personnel. This section will also include a brief statement of alleged noncompliance of the Federal Aviation Regulations that were noted during the inspection.

(e) *The analysis summary will report significant findings only* noted during the inspection. This section of the report is to be forwarded to Washington headquarters (FS-300 and FS-400) upon request.

(3) *Section C—Areas of Inspection.* It is through this section of the report that the team notifies the principal inspector and through him the operator, the areas inspected titled area by area and the results of the inspections performed. This section contains the team's findings, discussions, comments, and recommendations as they pertain to the systems inspected.

(a) *Findings.* A finding is a factual determination made as a result of examining a group of data relating to a system and should be a brief factual statement which defines the defects in the operator's PROGRAM or SYSTEM.

1 *Careful consideration must be given* to the use of words that imply an all-inclusive situation such as: "The training programs are inadequate."

2 *Statements such as,* "AJAX Airlines is in noncompliance with FAR 121.0" should not be used as a statement finding.

(b) *Discussion.* Once the problem has been stated and the facts bearing on it generally have been given, further elaboration requires an exposition of the factors to be considered, assumptions made with respect to them, and observations noted in the course of the study. This is the place for analysis, exploration of possibilities and reasoning toward the solution of the problem.

1 *The balance of the discussion* (analysis) should contain all significant factors to support the finding—such as: reference to operator's manual procedures, requirements of FARs, reference to operator personnel interviewed, reference to other SWAP findings, changes in management and supervision, interruption of schedules, MRR, incidents, effect on safety, etc.

2 *This information (data)* should be expressed in a manner to reflect sound deductive reasoning in arriving at the stated finding.

3 *Sufficient examples* will be listed to document discrepancies found during the on-site inspections. They should be listed so as to be easily identified or reviewed by the operator's personnel from their own records. They serve to confirm and support the basic finding and add credence to the conclusions. They should be of such quality to support legal enforcement action if deemed necessary by the principal inspector.

(c) *Conclusion.* Considering the problem, the facts relating to it, and the discussion of the issues and factors pertaining to its causes and its potential solutions, one should be able to formulate conclusions as to the causes of the problem, requirements for its solution, and the actions best suited to the case. The conclusions form the basis for the

development and presentation of alternative courses of action.

(d) *Recommendations.* A page separate from the finding and discussion will be used for recommendations. The consequences of recommendation should be clearly stated.

1 *It should state* any alleged noncompliance found.

(4) *Section D — Substantiating Information.* This section will be used to transmit all pertinent data that was collected by the team to the D.O. for their use in actions with the operator. The documents contained in this section will be identified with the item they support.

203. *DISTRIBUTION OF FINAL SWAP REPORTS WILL BE AS FOLLOWS:*

a. Original will be retained by the SWAP team.
b. One copy without Section D to the Chief, Flight Standards Division/Staff.
c. Two copies (one copy without Section D) to the district office chief.
d. A copy should be available for transmittal to Washington headquarters WHEN REQUESTED by either FS-300 or FS-400.

204. *NONDISCLOSURE TO THE PUBLIC.* The contents of the final SWAP reports constitute findings and recommendations made by the FAA in the enforcement of Federal Aviation Regulations. Accordingly, under the exemption authorized by Section 7.65 of Part 7 of the DOT regulations, copies of SWAP reports or information therein shall not be publicly released or handled indiscriminately. Individual SWAP reports shall be considered as being "For Official Use Only" under the provisions of Order 1600.15C, Information "For Official Use Only" and shall be marked in accordance with paragraph 7 of the Order. (This classification is for the COMPLETE Final SWAP report and does not prohibit transmitting the Findings and Discussion portion of Section C to the operator.)

205. *CONFIRMATION OF OPERATORS' MEETING.* The district office chief or principal inspector will forward a letter to the operator confirming team findings, verbal agreements and deadlines for corrective action developed during the post-inspection meeting.

206. *ALLEGED NONCOMPLIANCE DATA.* One of the objectives of the Systemsworthiness Analysis Program is to emphasize the responsibility of district office staff as the primary agency representatives for their operators. In order to effectively carry out this responsibility, these inspectors utilize the determinations of the SWAP team. In cases where noncompliance is found by the SWAP team, the team report will include sufficient evidence to support the alleged noncompliance. SWAP teams do not process violation reports.

a. *The evidence should be turned over* to the district office for handling.
b. *The information contained in SWAP reports* is the result of systematic SAMPLING. Any noncompliance cited, therefore, does not necessarily comprise the total individual noncompliance that might exist in any given area.
c. *The district office is the official channel for liaison* with the operator regarding violations disclosed by SWAP. It is essential that a practical method for securing necessary copies of documents be established by the district office which is agreeable to the operator and fully understood by all concerned.

(1) The contact points within the operator's organization should be clearly identified.
(2) If a letter of request is required by the operator prior to releasing documents, or copies of same, such correspondence is to be initiated by the district office.

d. *Manuals/Policies/Instructions.* Manual pages, written policy or instruction which resulted in noncompliance only will be IDENTIFIED, except where such material is not readily available to the district office. In these cases, copies will be made.

e. *Observed operations.* Actually observed noncompliance operations are to be supported by appropriate reports, i.e., en route, etc., and/or written statement.

f. *Frequent communications* with district office chiefs or principal inspectors regarding inspections are to be maintained. The SWAP team is to keep the district office inspectors immediately informed regarding major areas of noncompliance or significant defects.

g. *Disposition of alleged noncompliance data.* The district office has the responsibility to determine whether a violation occurred and the course of enforcement action, administrative or legal, that is appropriate in accordance with Handbook 8030.7A.

(1) *SWAP reports are directed* to the analysis of the operator's systems and control of these systems. Examples of defects resulting from system and control problems are cited in support of findings. These examples are frequently items of noncompliance which of themselves may individually warrant enforcement action. (The format and language of a SWAP report is not intended to specifically include the factual statements designed to meet the violation reporting requirements of Handbook 8030.7A.)

(2) *SWAP reports are to identify* sufficient facts and material and include details upon which determinations of noncompliance may be based. When such determinations are made during the course of the on-site inspection, documentation of evidence of non-

compliance noted and contained in SWAP reports will be secured. These will be provided to the principal inspector for use in connection with such enforcement action as may be appropriate. For example:

(a) *Operator's records.* One copy of each sampled record identified in the SWAP report indicating noncompliance. Where a large number of defective records are involved, provide only two or three sample copies. Other records reviewed which contain similar deficiencies are to be identified.

207. *REPORT OF CORRECTIVE ACTION (RIS: FS 8000-7).*

The feedback will identify each finding in the same order as presented in the SWAP report and will clearly but briefly state the corrective action that is satisfactory to the certificate holding office. This will include:

a. *Where corrective action has been taken.*
b. *Where corrective action is not forthcoming.*
c. *Action underway or planned on open items.*
d. *A report of corrective action* will not be considered complete until each finding has been reported as satisfactorily closed in the opinion of the certificate holding office. A status report will be submitted each 30 days on all open items following initial report of corrective action.
e. A follow-up report of corrective action will be submitted, normally, within 60 days following receipt of the final SWAP report, by the certificate holding office.
f. Routing of report of corrective action. Two copies to Chief, Flight Standards Division/Staff.

208.-299. *RESERVED.*

CHAPTER 5. SYSTEMSWORTHINESS ANALYSIS PROGRAM

300. *PURPOSE.* This section provides guidance and procedural instructions applicable to the subsystems within the overall Flight Standards Systemsworthiness Analysis Program.

301. *OBJECTIVE.* The Systemsworthiness Analysis Program applies techniques to assure:

a. *An accurate and penetrating assessment* of all elements of the operator's systems.
b. *Improved effectiveness* of all surveillance functions through analysis of the vital elements of the operator's systems.
c. *The acquisition of factual data* relating to the status of the operator's compliance with applicable Federal Aviation Regulations.
d. *A factual determination* of the potential of the operator's program to consistently conduct safe operations.

302. *SCHEDULED ANALYSIS.* In general, a scheduled systemsworthiness analysis may be limited to one area of an operator's systems. Such scheduling should assure that the time lapse between analysis is not sufficiently long to permit a significant deterioration in the operator's systems. However, several functions of one or more areas may be analyzed at the same time by an optimum team without seriously disrupting the operator's programs or unduly interfering with its personnel or operations.

303. *ANALYSIS PROCESS.* An illustration depicting the analysis processes including the techniques for a penetrating analysis are shown on Figures 1 and 2. These diagrames illustrate the type of follow-through (ascertaining cause and determining effect) included in the analysis processes.

a. *The left-hand side of the illustration* (Figure 2, page 205) is another method of presenting the operator's management groups responsible for

establishing directives, policies and procedures. In applying the Systemsworthiness Analysis Program, the analysis team evaluates and famaliarize themselves with those management segments to be analyzed.
b. *The first level to which management's policies* are applied is the submanagement and supervisory categories at the company headquarters and other facilities. This is accomplished through the use of seven constant components (Figure 1, page 204).
c. *The analysis team verifies the application*, acceptance and comprehension of top management policies at this level. When only partial comprehension, acceptance, or application is found, the CAUSE for deviations will be determined.
d. *In making a determination as to cause and effects* of deviations from significant policies, certain lead words can be used advantageously (who, what, when, where, why, and how). The type of modifiers to be used with these lead words will be dependent upon the information being sought; e.g., HOW was it authorized (in writing or verbal), WHO authorized the change, etc. It is apparent that the use of such words does not lend the question being asked to a "yes" or "no" answer. They tend to draw out the person giving the reply and open up avenues for further questions. These fundamental lead words are highly effective analysis tools, when used in a reasonable manner, by a good listener.
e. *The verification process of the Systemsworthiness Analysis Program* is also used at the employees level. The techniques employed at this level are the same as those used for the submanagement and supervisory levels.
f. *It is apparent, that should the penetration phase of SWAP* be applied to all deviations regardless of their significance, the analysis process would

be cumbersome and time-consuming. Therefore, before the penetrating processes are used on a deviation, their probable impact on compliance with FARs and the effectiveness of the overall system should be analyzed by the team. Should the analyses show deviation that would adversely affect the integrity of the system, etc., employ the penetration processes. If, on the other hand, the analyses indicate the deviation is not significant to the overall program, it should be noted by the team for discussion and disposition by the principal inspector.

304. *PRIMARY ORGANIZATIONAL AREAS.* The four primary areas used by operators to conduct their operation are:

a. *Standards and Procedures.* This basic area includes the operator's system for establishing what he is going to do and how he is going to do it. Where manuals are required by regulation, this is the area which includes responsibility for their publication, accuracy, adequacy, distribution, and revision status. This area also includes:

(1) The operator's system for establishing and disseminating policies and guidelines for management decisions affecting flight safety.
(2) Since this area constitutes management's communication network, close attention should be given to the structure responsibilities, staffing and facilities.
(3) In analyzing this area, it is important to bear in mind that individual discrepancies are usually indicators of system breakdown.
(4) When manuals are found with obsolete pages, inspectors should be concerned with the lack of management control which allowed this condition to exist. Inspectors should be alert to situations where responsibilities and authority in regard to safety are not clearly delineated.

(5) Where procedures for work performance, inspection, testing, etc., are inadequate or erroneous, inspectors should be concerned with the qualification, staffing, supervision, and control of the people and system which produce the procedures.

b. *Quality Assurance.* This basic area includes all functions and activities directed toward assuring that work performed and services rendered are done so in accordance with the operator's policies, procedures, instructions, and in accordance with the applicable Federal Aviation Regulations. This includes the system by which the operator assures that his product conforms to an established standard. "Product" here is used in its broad sense.

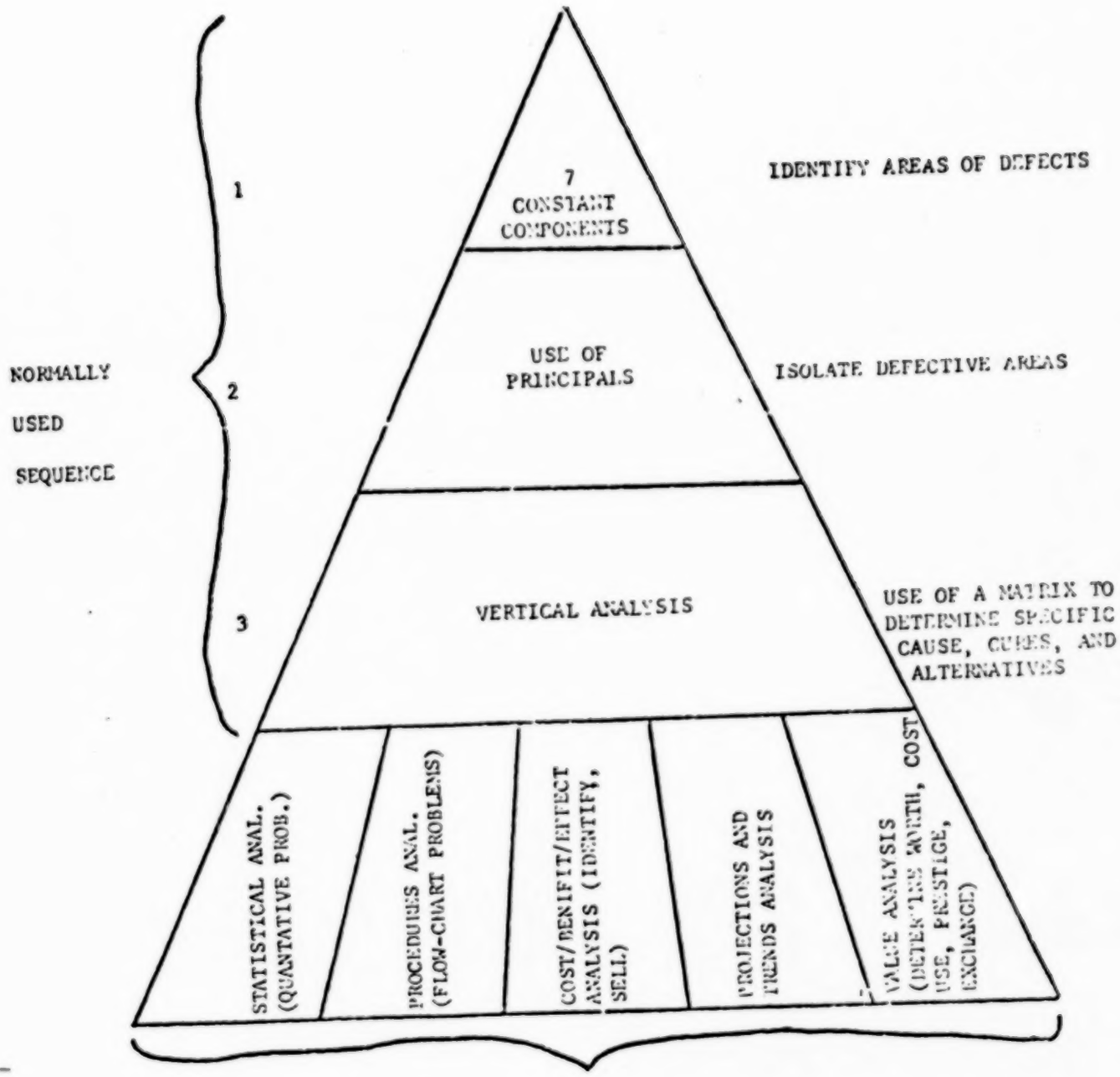
(1) A specific organizational segment may be responsible for this function.
(2) These units may be called an inspection department, quality control department, technical compliance, etc. Regardless of the product and of how formally structured this function is, the basic essentials are the same.

c. *Equipment and Facilities.* This analysis area includes those organizational elements responsible for providing tools, classrooms, materials, shops, supplies, parts, and any other article or commodity, except people, used in the operator's "production" process. This function is also responsible for maintaining the condition and adequacy of these "production tools." Where the previous two areas have been concerned with "what is done, how well it is done," this area assures the ways and means to actually do the job.

d. *Personnel and Training.* This very important analysis area encompasses the total human element. It is concerned with both the quantity and quality of people. It includes availability,

qualification, competency, certificate requirements, direction and training of the operator's personnel. Basically, the concern here is, "Are there enough competent people to do the job?" In many cases, the Federal Aviation Regulations are specific in the requirements for certificated people, training programs, supervision, inspection authorization, etc. In other cases, personnel requirements are implied by requirements for "inspection systems," etc.

FIGURE 1. HOW TO APPROACH SYSTEMS ANALYSIS



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305.-399. RESERVED.

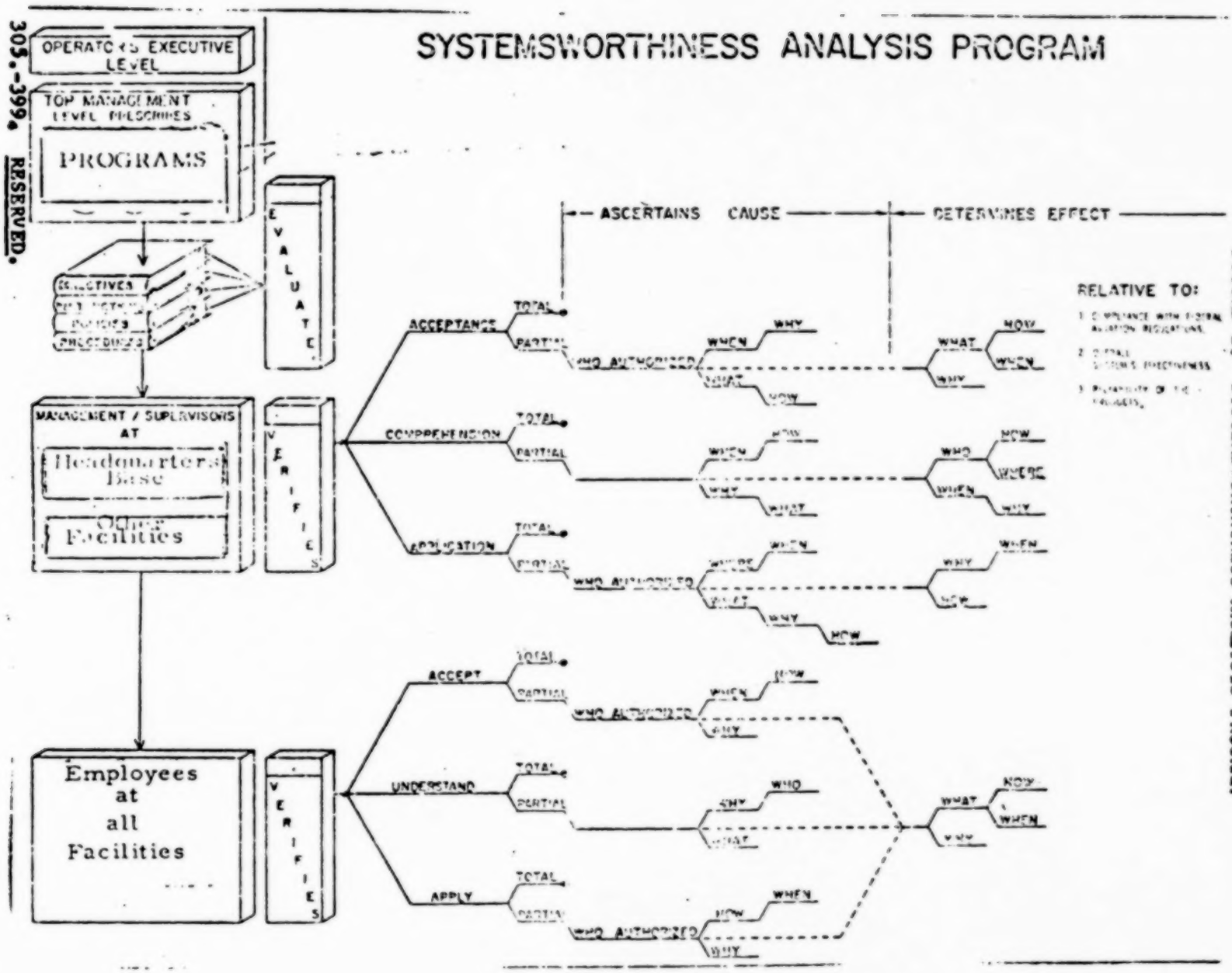

FIGURE 2. SYSTEMSWORTHINESS ANALYSIS PROGRAM

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CHAPTER 6. SYSTEMSWORTHINESS ANALYSIS PROGRAM—MAINTENANCE/AVIONICS

SECTION 1. FAR 121/123/127 OPERATORS AND ASSOCIATED CERTIFICATED FACILITIES

400. *OPERATOR'S ORGANIZATION.* The systems used by operators to maintain aircraft are divided into seven functional areas.

a. *The successful and economical operation* of these complex maintenance areas is dependent upon the thoroughness and effectiveness of directives and followup systems generated by the operator's management group.

b. *These directives and followup systems* normally consist of policies, procedures, and methods applicable to one or more of the listed functions:

(1) *Functions.*

(a) Training.
(b) Quality Control.
(c) Inspection.
(d) Production Control.
(e) Product Improvement/Modification.
(f) Maintenance Performance.
(g) Performance Analysis.

c. *A SWAP team analysis* of an air carrier, travel club or commercial operator should not require a routine SWAP team visit to the certificated facilities with which the carrier contracts unless that facility functions as the physical location of the carrier's main maintenance base. During the analysis, a nonroutine visit to a certificated contract facility may occasionally be required to establish or verify that work is being performed in accordance with the carrier's maintenance program. Such visits should be coordinated with the facility's certificate holding office and should be limited to the specific problem at hand and

not to determine the repair facility's compliance with its own manual or the regulations.

d. *Preparation.* Reviewing the air carrier's Mechanical Interruption Summaries (MIS) and Mechanical Reliability Reports (MRR) files will help the analysis team member to identify problem areas in the carrier's maintenance system. Repetitive occurrence associated with an aircraft, its powerplants, or components (e.g., incompleted trips, frequent delays attributable to maintenance, etc.) are indicators warranting exploration during the actual analysis.

401. *FUNCTIONAL ANALYSIS AIDS.* The information in the following paragraphs describe the seven functional areas:

a. *Training function* is an important and distinct part of the operator's organization:

(1) It provides for the systematic development of personnel knowledge, ability, and competence in maintaining the airworthiness of aircraft.

(2) Product quality can rapidly deteriorate to an unacceptable level through lack of proper training.

(3) The development of new and complex equipment and the rapid changes in methods of maintaining aircraft require that personnel knowledge and skills must advance commensurately.

(4) In many cases, the introduction of new equipment into service has resulted in the selection of the most experienced personnel to maintain the new aircraft. This causes the older aircraft to be maintained by less experienced personnel and can result in a deterioration of product quality.

(5) In addition, many of the older aircraft are being operated by new operators, and as a result, their personnel are unfamiliar with the aircraft and its system. In each of the

above cases, training of personnel is necessary.

(a) *The scope of training* is dependent upon the operator's program requirements. In all cases, individuals who have the duties, responsibilities, and authority for personnel training must be properly qualified and guided by adequate procedures and instructions. Training facilities and aids must be sufficient to meet the needs of the training program. Various types of training are utilized in the development of personnel competency such as:

1 Formal training on new equipment.
2 Recurrent training.
3 Indoctrination of new personnel.
4 Specialized and product manufacturer training.
5 On-the-job and self-instruction.

(b) *Training programs* should contain standards for instructions, schedules, course curriculum, and provision for recordkeeping. Although all of the following points in question form do have universal application, it is suggested that the applicable ones be considered during the analysis of an air carrier training function:

1 Does the air carrier have an apprentice training program? How does it work? Where is it given? How comprehensive is it? Who administers it? What method does the operator use to determine its adequacy?

2 Does the performance of a particular job require initial formal training? Informal training from

one employee to another? Training from supervisor to employee? What training is given? How is it administered? Who gives the required training? How is its adequacy determined?

3 Does the carrier have a formal training department? What area does it cover? Mechanics? Inspectors? Supervisors? Management? Engineers? Where in the organization does the Training Department fit To whom do they answer?

4 Who schedules employees for training? Is the Training Department involved in the scheduling of employees?

5 Who develops the training outlines?

6 Who decides the need for recurrent training?

7 Is training extended to contractors' employees? How does the carrier determine the need for contractors' employees training?

8 Are there adequate training aids for technical training?

9 Are instructors competent and able for training assigned? Who makes competency determination? How is it made?

10 Are there indications of lack of training. Did personnel complain of the lack of training? What specific deficiencies were cited? How did you verify or disprove the allegations?

11 Are training records maintained on each employee? Where are they kept?

(c) *Written procedures and instructions* are an effective supplement to any of the above training methods. They can serve a definite purpose by providing the step-by-step details of completing the work function properly.

b. *Quality Control* is a function by which air carrier management assures that its product conforms to an established standard. While there is generally a specific organizational segment responsible for this function, the elements of quality control are inherent in every functional area of the overall maintenance organization. The quality control organization should be responsible for not only for conformity to technical standards, but also for conformity to company policies and procedures. In some organizations, the actual measurements of the product quality are performed by an inspection department, and the standards or the requirement to inspect are established by the quality control organization. The extent to which the quality control organization assures conformity to company policies and procedures may differ widely among various carriers; therefore, analysis of this area must be carefully and thoroughly conducted. The following questions are designed to assist the analysis team:

(1) Are the instructions and standards for doing a particular job sufficiently detailed to provide the worker with the data he needs? Are they understandable and clear? Do you understand them or do they generate a feeling of need for simplification, clarification, etc.?

(2) Are instructions (manuals) readily available to employees in need of them? Are manufacturers' manuals used? Who maintains them?

(3) Are individual job cards used? Do they contain the job instructions? Are they complete and accurate?
(4) How are job cards accounted for? Is there an established system? Is it satisfactory? Who controls this accounting?

(5) How are nonroutine items handled?
(6) Is adequate housing provided to permit continuous maintenance in inclement weather? If the housing is procured by contractural or other arrangements, is it satisfactory for the type of work to be done? Is it usable? Is it in the right location?
(7) Are sufficient workstands available to examine portions of aircraft beyond normal ladder reach? Are they properly located over the carrier's route structure?
(8) Are the special tools required for the job available? Are they in usable condition? Engine overhaul? Instrument? Electrical/Electronics? Airframe repair? Accessory overhaul?
(9) Is special balancing and testing equipment available? X-ray? Magnaflux? Other?
(10) Does carrier do plating? Are the standards used for this work satisfactory? Is the work contracted? Does the contractor's equipment meet the standards set for the specific work he performs? What system does the carrier have to ascertain the contractor has adequate instructions, tools, equipment, personnel, etc., to perform a particular job?
(11) Are individual mechanics required to have minimum tools? Are they adequate?
(12) How does carrier control the quality of fuel and oil purchases? Do they meet manufacturers' specifications?
(13) Who controls the purchasing of parts and supplies? To whom do they answer?

c. *Inspection.* Inspection is the function which, through processes of examination, measurement, and test, confirms that the product conforms to established standards. The inspection department is usually a distinct segment of the carriers' overall maintenance organization. It should be

unencumbered with countermanding authority from other segments or functions. Competent and adequate staffing is essential and proper tooling, equipment, facilities, and instructions are required. Close alliance or actual integration with the quality control organization is a common situation. Special attention in the analysis of the inspection function should be given to ascertain the organizational level at which it is separated from the various production functions. Typical questions for the analysis of this area are:

(1) What system has been devised by the air carrier that integrates the findings of the inspection department into the aircraft's work program?
(2) Is the inspection organization separated from the production organization? At what level does inspection and production come under a common head?
(3) What is organization setup for lower echelons? How many inspectors work for a single supervisor?
(4) How are inspectors selected?
(5) What type of maintenance checks require the services of the Inspection Department? Where are these maintenance checks conducted?
(6) Do inspectors accomplish receiving inspection? 100 percent? How are new or reworked parts selected for inspection?
(7) Is there inspection representation at contractor's facilities?
(8) What type jobs are "double inspected"?
(9) What checks or maintenance operations are inspectors using as "work finders"?
(10) What main. nce operations are "bought back" by inspectors?
(11) What system is employed that assures a completed airplane is released to flight operations after an overhaul or heavy check has been performed? Has the system proved workable, practical, and foolproof?

(12) Do such functions as engine overhaul, instrument, radio overhaul, etc., have inspections specializing in these areas assigned? How are they selected?
(13) What inspection responsibilities have been delegated to production personnel? How is it controlled?
(14) How is the maintenance release accomplished after overhaul? After heavy check? After a complicated component change or repair?
(15) Are personnel releasing to service propellers and instruments out of overhaul properly certificated and rated (Repairman Certificate)?

d. *Production Control.* Production control is a management function responsible for scheduling maintenance operations including the necessary controls to assure that work is scheduled in accordance with time limitations contained in the operations specifications and the operator's manual. It is utilized to assure that maintenance functions are scheduled in logical sequence at the proper time and at a place where competent personnel, proper parts, equipment, tools, and instructions are available to accomplish the work required by the maintenance program. Production control serves as a regulator for the maintenance cycle. It provides safeguards to prevent:

(1) Exceeding approved time limitations.
(2) Backlog accumulation of work resulting in loss of scheduled aircraft service.
(3) Errors in workmanship through unplanned and hastily performed work.
(4) Shortages in available manpower.

(5) Failures to perform the work required by the Federal Aviation Regulations.

(a) Many maintenance functions are performed on a nonroutine basis. In this respect, the system for production control must be sufficiently flexible to compensate for variations in workloads and provide the necessary schedule and control to assure that the work is accomplished. Production control is also the means of coordinating the efforts of the engineering, supply, maintenance, and inspection organizations. In accomplishing its functions, production control should know:

1 The location of the aircraft on the route scheduled flight time.
2 Accumulated flight time each day.
3 Total time and time since last overhaul time-controlled parts.
4 Types of maintenance operations to be performed and the time interval for performing each operation.
5 Manhours necessary to perform the operation.
6 Manpower availability at a given time and place.
7 Parts requiring replacement in each maintenance operation.
8 Availability of parts, tools, and equipment.
9 Availability of spare equipment.
10 Output capability of all shops in the repair facilities.

(b) The following questions are developed to assist in making an analysis of the production control functions.

1 Is there a separate organizational unit responsible for the scheduling of aircraft maintenance functions? Does it include the shop scheduling of parts, components, etc.? Are all shops considered in this scheduling?
2 To whom does the scheduling organization answer?
3 Are there any indications of the lack of necessary ground time to accomplish required maintenance?
4 Is there an abnormal number of carryover items due to lack of time or parts?
5 Who schedules ADs and engineering changes?

e. *Product Modification.* Product modification is the function responsible for making alterations to a product so that it will more adequately satisfy its designed purpose. It is an integral part of the operator's total maintenance program, and is especially important in cases where deterioration of product reliability may affect the airworthiness of the aircraft.

(1) *Product modification functions* are generally organized into an engineering department or a combination quality control and engineering department. Regardless of how the functions are organized, the department must be capable of properly controlling product modification. It must have competent personnel who are assigned the duties, responsibilities, and authority to make design changes and prepare necessary data and drawings including procedures and instructions necessary to accomplish the modification. Determination of the need for product modification usually originates in another area of the maintenance organization.

(2) *Typical activities* which occur after the need for product modification is determined are:

(a) Evaluation and planning.
(b) Preparation of necessary data, drawings, and engineering change orders.
(c) Coordination with the product manufacturer as necessary.
(d) Parts, tools, and material specification.
(e) Preparation of procedures and instructions relative to accomplishing the modification.
(f) Followup after the product is returned to service.

(3) *Many segments of the maintenance organization* must be closely coordinated in order to properly accomplish product modification. For example:

(a) A service bulletin is issued by the product manufacturer concerning a service difficulty.
(b) The analysis department furnishes the product modification function (engineering department) with appropriate data concerning service experience with the product.
(c) The service bulletin is evaluated and the decision is made to incorporate it into the aircraft fleet.
(d) The engineering department prepares necessary data including procedures and instructions.
(e) Purchasing and parts procurement department obtains the necessary parts, materials, and tools.
(f) The analysis department provides surveillance of the fleet and furnishes the product modification function with any other pertinent data.
(g) The training department may become involved if the work techniques are specialized.

(h) The production control department revises the maintenance schedules to provide sufficient time and manpower to accomplish the work.
(i) The maintenance department accomplishes the work and the inspection department performs a conformity inspection.
(j) The analysis department monitors the reliability of the product and confirms correction of the service difficulty.

This combined action completes the cycle and should provide an improved product.

(4) *The analysis of this phase of the carrier's total maintenance program* considers the adequacy of the product modification organization, its authority and control, and the existence of guidelines and procedures for its proper functioning. Also considered are such factors as the competency of its personnel and their comprehension of and adherence to the carrier's policies, standards, and procedures. The following type questions will serve as probes for analyzing the modification area:

(a) How is the need for modification changes determined?
(b) To what extent is the manufacturer's engineering service used?
(c) What manufacturers' drawings, test reports, and system analyses are readily available?
(d) What system of feedback is used to advise the engineering group of any problems encountered with the implementation of the modification by the maintenance sections?
(e) Is there a check for airworthiness of all modifications by a qualified person other than the designer? If so, who

makes the check and what are his qualifications?

(f) How is the determination made as to which modifications require FAA approval? Who determines what changes require FAA approval? How are the changes requiring FAA approval handled?

(g) How are weight changes recorded?

(h) How are Engineering Orders given to shops for action? Are they easily identified as EOs? Are they so written as to be easily understood by maintenance personnel?

(i) What actions must be taken before releasing a modification for work by the maintenance department.

j. *Maintenance Performance.* Maintenance performance is the function generally referred to as "maintenance" and includes responsibility for actual work processes of overhaul, repair, alteration, adjustment, and checks of the aircraft and its systems and components.

(1) The maintenance performance organization must possess capability through adequate facilities, competent personnel, practical instructions and procedures, attainable standards, and effective controls regardless of variations in size and complexity. Careful evaluation of these factors is essential to a successful analysis of the maintenance function. The following questions are directed toward making such a determination:

(a) What is the line of authority and responsibility of mechanics? What is relationship of maintenance organization to purchasing, training, inspection, engineering, and production control? Where in the organization do these segments answer to a common head?

(b) Under what condition can "maintenance" deviate from published standards?

(c) What level of supervision can fire and hire? Issue reprimands for record?

(d) What is general level of mechanic intelligence as indicated by his educational background, formal schooling, trade schools, etc.? What is mechanic expected skill level as indicated by his experience with the company and with industry? Are mechanics assigned work on a specialist's concept? How many mechanics are certificated?

(e) Are adequate tools, manuals, and facilities available?

(f) Are contract mechanics used at line stations?

(g) What is source of newly hired mechanics? Do mechanics move about system?

(h) Is there a system established by which a deficiency found by mechanics can be made known to personnel with authority for having it corrected?

k. *Performance Analysis* is a function of the overall maintenance system which evaluates product performance and identifies problem areas.

(1) *It detects deficiencies*, signals the need for corrective action, and monitors the effect of the action. It provides inputs to the engineering department to effect modification, to quality control to provide standards, to inspection to revise techniques, to production control to provide rescheduling, etc., inherent in this activity, is data collection and technical investigation.

(2) *Analysis of the procedures and control* exercised by this organization and the effectiveness of their coordination with other or-

ganizational elements should be carefully considered. Following are typical questions for analysis in this area:

(a) What is the source of basic information on service difficulties? Is there more than one source? What are they? Are any useful sources being overlooked or omitted?
(b) Are there adequate instructions for completion of reports on service difficulties? Are they understandable? Are they usable? Are they followed?
(c) Is there a system for reporting difficulties encountered during operation of aircraft? During overhaul? During routine inspection?
(d) Is responsibility for reporting difficulties spelled out in sufficient detail to be meaningful?
(e) Who is this information directed to? Do they get it all?
(f) Does each department receive and analyze its own difficulties? How are upper echelons advised of how the operation is going.
(g) Are personnel analyzing difficulties capable and trained to perform this function?
(h) What is required to initiate corrective action once a problem has been identified? Is the responsibility for implementing this requirement spelled out?
(i) What use is made of industry's problems in analyzing the difficulties being experienced by the air carrier?
(j) Are fixes established based on problems being encountered by industry before they occur on the carrier being analyzed? Are MRR reports used for this purpose?

(k) Are boards of inquiry established for major problem areas such as engine failures, structural failures, etc.? Who makes up this Board?

402.-429. *RESERVED.*

SECTION 2. APPLICATION OF MAINTENANCE/AVIONIC SYSTEMSWORTHINESS ANALYSIS—GENERAL AVIATION

430. *PURPOSE.* This section provides guidance and procedural instructions for the application of the Systemsworthiness Analysis Program.

a. *Systemsworthiness Analysis Team—Preparation and Planning.* The team should first review and become familiar with the operator's policies and procedures as they pertain to the area to be analyzed, and as set forth in his manuals. The objective of this review is to determine whether or not company policies and procedures are consistent with the provisions of the Federal Aviation Regulations, operating certificate, and operations specifications.

(1) A successful systemsworthiness analysis requires careful fact-finding and objective analysis.
(2) When a deficiency or questionable area is detected, a thorough search must be made to trace it back through the system to the causal point of origin.
(3) The inspector must concentrate on the area under analysis and pursue it to a positive completion so that a factual determination can be made.
(4) Deficiencies existing in any organization may result from a variety of causes. The inspector should be particularly alert to indications of inadequate communications or followup procedures and a lack of effective delegation of authority.

b. *Analysis of Supervision.* It is one thing to delegate authority and another to see that responsibilities are carried out effectively in accordance with established policies and procedures. Check for the adequacy and understandability of instructions and directives, and the training and competency of personnel. In this respect:

(1) Do employees understand and effectively carry out policies and procedures?
(2) Determine whether proper delegations of authority are made down through the organization.
(3) The inspector must evaluate the adequacy of control exercised by management by determining how management follows up to ascertain policy and procedural compliance.

c. *Analysis and Procedures.* Determine whether or not procedures are set forth clearly and are practicable of accomplishment. When analysis of a problem area discloses that existing instructions are inadequate or the system used when implementing instructions lacks proper definition, detail, or sensibility, then procedures should be the prime area of concern.

d. *Analysis of Company Procedures.* It is important that the inspection team determine whether the operator's policy is set forth in a manner which will assure compliance with acceptable safety standards. Assuming that company procedures as set forth in the operator's manuals and directives is satisfactory:

(1) Determine whether company procedures are in fact carried out in actual practice. Misinterpretation of company policies by personnel at middle management or working level may be reflected through incomplete records or procedural shortcuts.
(2) Corrective action may require additional training, recasting of company policy or

revision of company procedures to conform to company policy.

e. *Analysis of Management Control.* This is one of the most important aspects of the Systemsworthiness Analysis. A good axiom is "competent management usually results in a safe operation." The person ultimately responsible for conducting a safe operation is the president of the company. In a large company, the president must delegate authority down through the organization. It is important, therefore, that the systemsworthiness analysis team be knowledgeable of the duties and responsibilities of key company officials. The team should consider:

(1) *Management competency.* This is usually reflected in the operator's compliance and/or safety record. Are the supervisors abiding by the policies and rules set forth in the company manuals and directives?
(2) *Communication.* An indication of a communication breakdown through the organization may also reveal that management is not monitoring performance at the working level.

431. *AIR TAXI OPERATORS AND COMMERCIAL OPERATORS OF SMALL AIRCRAFT (FAR 135).*

a. *Performance Factors.* In planning and conducting the inspection, the following factors which influence the performance of air taxi and commercial operations either directly or indirectly, should be considered.

(1) Type/area and frequency of operations. (scheduled, etc.)
(2) Class and category of aircraft (complexity).
(3) Stability of the operators' fleet.
(4) Service history of the aircraft.
(5) Aircraft manufacturer's recommendations.
(6) Size of organization and employee morale.

(7) Service experience of the operator.
(8) Operator's maintenance management policies.
(9) Maintenance facilities utilized (owned or contracted).
(10) Aircraft inspection program utilized. (100-hour/annual, progressive, or approved inspection program).
(11) Fueling facilities utilized (owned or contracted).

NOTE: The importance of each item is not necessarily in the order shown above, since they bear different degrees of importance with each operator. The above lists should not be considered to be all-inclusive and is intended only as a guide which may lead to other factors affecting an operator's performance, that should also be considered.

b. *Determining the Importance of Performance Factors.* Operators' reports and records offer some keys to the importance of the above performance factors as they affect his operation. When planning the inspection, the following reports and records should be obtained from the certificate holding district office, in accordance with regional procedures, and should be thoroughly examined:

(1) *Operations Specifications should show*:

(a) Whether an approved aircraft inspection program is required.
(b) Whether deviations to any rule is authorized.
(c) The specific items required to meet a particular situation.
(d) The category and class of aircraft authorized for use.
(e) Registration numbers of aircraft subject to an approved inspection program.

(2) *Certificate Holders Manuals should show*:

(a) The identity of each person in a management capacity who is authorized to act for the certificate holder in his assigned area of responsibility.
(b) The procedures established by the certificate holder for the use and guidance of flight, ground operations and maintenance personnel.

(3) *Load Manifests should show*: (For multi-engine aircraft requiring two pilots.)

(a) Passenger and cargo load factors.
(b) Currency and accuracy of empty weight and center of gravity values being utilized, when compared with current aircraft weight and balance data, and equipment list.

(4) *MRR/MIS reports should show*:

(a) Significant trends in the mechanical reliability of the operator's aircraft.
(b) Indications of breakdown in the operator's maintenance management policies.

(5) *Prior FAA inspection reports should provide* a history of deficient areas, if any.
(6) *Follow-up reports and enforcement actions* will often provide keys to weak areas in the operators management system and reflect their overall attitude toward Federal Aviation Regulations.

c. *Primary Areas.* The following inspection areas should be given added emphasis, since the history of air taxi operations has shown that these areas have generated, and continue to generate the most significant problems.

(1) *Policies and Procedures.*

(a) Certificate Holder's Manual.

1 An effective certificate holder's manual should contain a statement which places the responsibility on a particular individual for its content, accuracy, currency, and distribution.

2 The procedures contained in the manual should not merely restate or paraphrase a regulation or a company policy; rather they should identify who, what, why, when, where and how the various functions are to be carried out. Each procedure should contain sufficient information for a new employee to effectively perform a given function without further guidance.

3 During an evaluation of the operator's maintenance procedures, consideration should be given to the following areas:

(a) Does the operator allow sufficient time for scheduled maintenance?
(b) Is maintenance performed according to acceptable standards or specifications?
(c) Does the operator periodically check the adequacy of contract facilities?
(d) Do records indicate the contractor is performing in accordance with the contract?
(e) Are the duties and responsibilities of maintenance and inspection personnel clearly understood?
(f) Do maintenance personnel utilize FAA form 8330-2 M or D Report?
(g) Does the operator have a procedure for recording and correcting pilot reports of aircraft discrepancies?
(h) Does the operator have an established procedure to assure compliance with and recording of airworthiness directives?

(i) Does the operator have a procedure for correcting aircraft weight and balance data affected by repairs, alterations or equipment changes?

(2) *Quality Control System.* The certificate holder should utilize some form of quality control system to determine the effectiveness of his organization. For a small air taxi operation, this may be the review of a form completed by a pilot, mechanic, or fueling personnel, which feeds back sufficient information to management to assure that operating personnel understand and follow company policies and procedures. This is the system which closes the loop that began with the establishment of company policy. The result of an effective quality control system may be a change in policy or procedure, or a confirmation that the policy or procedure in current use will produce the optimum result.

(3) *Facilities and Equipment.* The maintenance agency utilized by the certificate holder, whether owned or contracted, shall have adequate facilities and equipment for maintaining the particular aircraft operated by the certificated holder. The team should determine:

(a) Whether storage space for spare parts, etc., is adequate and provides protection from damage and contamination. These conditions should apply to contract facilities as well.
(b) Those repair stations that are subject to other SWAP inspections will not be inspected in depth as a function of ATCO inspection.
(c) The fueling facilities utilized by the certificate holder, whether owned or contracted, should be capable of deliv-

ering uncontaminated fuel of the proper grade, type and quantity, while providing for passenger protection.

(d) That the fuel-dispensing equipment had adequate static ground protection, identification (grade of fuel), filters, and fire extinguishers.

(4) *Personnel.*

(a) All personnel used by the certificate holder should have the technical ability and experience necessary to perform their assigned duties.

(b) All persons directly in charge of maintenance shall be appropriately certificated.

432. *AIR TAXI OPERATORS OF LARGE AIRCRAFT.*

The instructions and guidance material contained in Section 1 of this chapter will apply to Air Taxi/Commercial Operators of large aircraft certificated under the provisions of FAR 135.2.

433. *REPAIR STATIONS FAR 145.*

a. *Performance Factors.* In planning and conducting the inspection, the following factors which influence the performance of repair stations, should be considered:

(1) The certificate and ratings.
(2) The class and category of aircraft, powerplant and/or appliances (complexity).
(3) The Repair Stations Inspection Procedures Manual.
(4) Multiple ratings.
(5) Manufacturers' recommendations.
(6) Major source of workload (air taxi, air carrier, travel club, etc.).
(7) Employee morale.
(8) Employee experience.
(9) Operator's experience.

(10) Facilities.
(11) Equipment.
(12) Operators' maintenance management policy.

NOTE: The importance of each item is not necessarily in the order shown above, since they bear different degrees of importance with each operator and the type of service being offered. The above list should NOT be considered all inclusive, and is offered only as a guide, which may lead to other factors affecting the operator's performance, and that should be considered.

b. *Determining the Importance of Performance Factors.* Operators' reports and records offer some keys to the importance of the above performance factors as they affect the operation. When planning the inspection, the following reports and records should be obtained from or examined at the certificate holding district office.

(1) *The repair station certificate* (Operations Specifications) will show:

(a) Ratings held, limited and/or class, e.g., airframe, powerplant, instrument, radio, etc.
(b) Limitations, if any.
(c) List of make, model, series or other identification.

(2) *The district office* repair station correspondence file will provide a history of problem areas, if any.

(3) *Corrective action reports,* administrative and legal, will also indicate past problem areas.

(4) *"Followup Reports"* of corrective actions will provide a key to the operator's attitude toward Federal Aviation Regulations.

c. *Certificate holder's personnel roster* should identify persons in management capacity who are authorized to act for the repair station in assigned areas of responsibility.

d. *Primary Areas.* The following areas should be given particular emphasis:

(1) *Policies and Procedures.*

(a) Each repair station shall maintain a current roster of its management and technical supervisory personnel and its inspection personnel. The roster will provide the following:

1 The person's name and title of his position.

2 Years of experience in the work he is doing.

3 Resume of past experience.

4 The scope of his present employment responsibility.

5 The type and number of his mechanic's or repairman's certificate and the ratings on that certificate.

(b) Repair stations may not use persons directly in charge of maintenance or alteration, unless he is included on the personnel roster.

(c) The team should determine whether the repair station is maintaining a current roster of personnel and that personnel are performing within the scope of their authority.

(2) *Quality Control System.* The repair station inspection procedures manual should provide a clear explanation of the internal inspection system.

(a) *The manual must state in detail:*

1 The methods, techniques, and equipment to be used to determine quality

or airworthiness of articles being maintained by the repair station.

2 The methods of inspecting incoming materials for state of preservation, malfunction or defects, before being placed in stock or used on aircraft.

3 The system of preliminary inspection to determine the state of preservation or defects of articles to be maintained and the recording of inspection findings.

4 The system of inspection for hidden damage in any airframe, powerplant or part thereof that has been involved in an accident.

(b) *The inspection procedures manual* should describe the continuity of inspection responsibility and include samples of inspection forms with instructions for executing them.

(c) *The inspection procedures manual* should reference the manufacturer's inspection standards when appropriate.

(d) *A copy of the inspection procedures manual* shall be available to supervisory, inspection, and other personnel. Each procedure should contain sufficient information for employees to effectively perform given functions without further guidance.

(e) *The team* will not only determine that the inspection procedures described in the repair station manual are adequate, they will also determine whether or not these policies and procedures are being adhered to by each echelon of the organization.

(3) *Facilities and Equipment.*

(a) *Repair stations* should have adequate facilities and equipment for maintain-

ing the products for which it is certificated.

1 Housing.

(a) Heat, ventilation, dust, humidity, and lighting control.
(b) Storage space and protection for tools, parts, and supplies.
(c) Cleaning, sandblast, battery service, spray painting, and plating isolated from production areas.

2 Equipment.

(a) Current data appropriate to rating held, including manufacturers' manuals and service information, airworthiness directives, etc.
(b) Appropriate inspection work forms.
(c) Special tools, test equipment, jacks, etc.
(d) Calibration and testing of all inspection and test equipment at regular intervals to assure correct calibration.

(4) *Personnel.*

(a) Technical personnel should have the ability, knowledge, and experience necessary to perform their assigned duties in an efficient manner.
(b) All persons directly in charge of maintenance or inspection must be appropriately certificated.
(c) All personnel should be thoroughly familiar with established company inspection procedures.
(d) During performance of maintenance functions, technical employees should have available and use the appropriate current technical data.
(e) Factory school and/or on-the-job training should be provided.

NOTE: Inspection teams should determine that repair stations performing maintenance for operators certificated under the rules of FARs 121, 123, and 127 have the operator's manual available to the technical personnel, and that work is performed according to that manual.

434. *MAINTENANCE TECHNICIAN SCHOOLS FAR 147.*

a. *Performance Factors.* In planning and conducting the inspection, the following factors which influence the performance of a maintenance technician school and its graduating students should be considered:

(1) The curriculum.
(2) Equipment and facilities (classrooms and shops).
(3) Instructor qualifications.
(4) Student instructure ratio.
(5) Instructional aids.
(6) Records.

b. *Curriculum.* In accordance with rating held:

(1) Is approved curriculum being followed?
(2) Does instruction program follow natural sequence?
(3) Have any changes been made to curriculum?
(4) Are shop phases correlated with theory classes?
(5) How and when are examinations given?
(6) Are examinations suitable and adequate?
(7) Does curriculum need changes?
(8) Do instructors have access to curriculum?

c. *Equipment and Facilities.*

(1) Does equipment and facilities meet FAR requirements?
(2) Are they maintained properly?
(3) Are safeguards being used for hazardous equipment?

(4) Is technical data available for use in shop?
(5) Are classrooms suitable for teaching?
(6) Are facilities and equipment proper for the number of students in classes?
(7) Do they have a tool and parts room?
(8) Where are records and tests stored?
(9) Are heating, lighting, and venting adequate?
(10) Do they have material, parts, tools, and shop equipment for student shop projects?

d. *Instructors and Personnel.*

(1) Do they meet FAR 147 requirements?
(2) Do they have industry experience?
(3) Does he have professional teacher training?
(4) What are the duties and responsibilities of each instructor?
(5) Do instructors have a training program?
(6) What is each instructor's teaching *load?*
(7) How do instructors follow the curriculum?
(8) What are the classroom abilities of each instructor?
(9) Does he use a daily lesson plan?
(10) How does "he" evaluate his instruction?
(11) Is he prepared when starting class? Was it adequate?
(12) Are uncertificated instructors used to teach aircraft subjects?
(13) Are any instructors also mechanic examiners?
(14) Observe mechanic practical if possible.

e. *Students.*

(1) Do they understand the curricula?
(2) Have they received the units of study reflected in school records?
(3) Is the training received effective?
(4) Are they interested and motivated by instructors?
(5) Are professional ethics and standards indoctrinated in them?

(6) Are tools, materials and equipment available to students during training?
(7) Does the student know the school's system for grading and evaluating?
(8) Is number of students enrolled below the schools approved enrollment authorization?
(9) How do students generally feel about course and instruction?

f. *Shop projects.*

(1) Do shop projects fit properly with curriculum?
(2) Is adequate information available to student on the project?
(3) Are projects of the correct complexity?
(4) Do projects significantly represent aircraft related jobs and curriculum complexity level?
(5) Does evaluation of project by student reflect the use of proper tools, test equipment and data?
(6) Are projects in skill areas and levels of those required by curriculum?
(7) Is flexibility offered to student who can go beyond the required?
(8) Are proper tools available and used by students?
(9) Do instructors assure projects meet AC 43.13-1 standards before acceptance for grading?
(10) How are project grading standards arrived at?
(11) Are students instructed to seek out and use appropriate data relating to assigned projects?

g. *Instructional Aids.*

(1) Are they realistic and practical for the intended purpose?
(2) Are they used at the proper time and available when needed?

(3) Do they have technical data available?
(4) Is technical information (FAR, Aircraft Spec., Advisory Circular) available?
(5) Does the school have aviation library open to students?
(6) Do they meet FAR 147.17 requirements?
(7) Are they adequately maintained, displayed, etc.?
(8) Do they have provisions for updating to modern instructional aids?

h. *Records—Students.*

(1) Are records understandable and meaningful and indicate the current situation?
(2) Are the required records maintained (FAR 147)?
(3) Are remedial and make-up assignments and examinations current?
(4) Are they complete?
(5) What type of security measures are taken with records?

435. *PILOT TRAINING SCHOOLS (FAR 141).*

a. *Performance Factors.* In planning and conducting the inspection, the following factors concerning aircraft maintenance which influences the performance of pilot training schools either directly or indirectly should be considered:

(1) Types of certificate and rating issued to the operator.
(2) Types of aircraft operated by make and model.
(3) Aircraft owned by the operator.
(4) Aircraft operated under lease agreement with maintenance arrangement.
(5) Who is responsible for the aircraft maintenance, and is he properly certificated?
(6) Aircraft maintained at operator's facility.
(7) Aircraft maintenance is contracted to a repair station or other facility by approved arrangement.

(8) Certificated maintenance personnel employed by the operators; other arrangements.
(9) Type of aircraft inspection program used, 100-hour/annual or progressive.
(10) Fueling facilities utilized (owned or contracted).
(11) The history of problem areas involving aircraft maintenance, if any, as indicated by related correspondence and inspection or enforcement reports.

(a) *The district office files will show*:

(1) Whether the school operates its own maintenance facility.
(2) Whether the school employs certificated maintenance personnel.
(3) When contract maintenance facilities are utilized, the team should also review the appropriate district office files.

(b) *Aircraft listings will show*:

(1) The number of aircraft operated by the school.
(2) The various types of aircraft, make/model.
(3) The aircraft owner (leased—maintenance agreement).
(4) The operation for which each aircraft is equipped.

(c) *Prior inspection reports will provide* a history of deficient areas, if any.
(d) *Followup reports and enforcement action reports* often provide keys to weak areas in the operator's management system and reflect their overall attitude toward Federal Aviation Regulations.

b. *Primary Areas.* The following areas should be given particular emphasis:

(1) *Policies and Procedures.*

(a) Each operator should have a policies and procedures manual which contains a statement which places the responsibility for its content, accuracy, currency and distribution on a particular individual.

(b) The procedures contained in the manual should identify who, what, why, when, where, and how various functions are to be carried out. When properly written, each procedure contains sufficient information for a new employee to effectively perform a given function, without further guidance.

(2) *Quality Control.* During an evaluation of the operator's maintenance procedures, consideration should be given to the following areas:

(a) Does the operator allow sufficient time for scheduled maintenance?

(b) Does the procedure for scheduling inspections prevent time overrun?

(c) Is maintenance performed according to acceptable standards or specifications?

(d) When applicable, does the operator periodically check the adequacy of contract maintenance facilities?

(e) Do records indicate that inspections and maintenance are being performed properly?

(f) Are the duties and responsibilities of maintenance inspection and service personnel clearly understood?

(g) Do maintenance personnel utilize FAA Form 8330-2?

(h) Is all maintenance performed properly recorded in aircraft and powerplant records?

(i) Does the operator have any established procedure to assure compliance with and recording of the airworthiness directives?

(j) Does the operator have a procedure for recording and correcting pilot reports of aircraft discrepancies?

(3) *Facilities and Equipment.* During evaluation of the pilot school maintenance facilities (owner operated or contracted), the following should be determined:

(a) That tools and equipment are available for adequate maintenance of the operator's aircraft.

(b) That parts and supply storage facilities provide adequate protection and identification for serviceable parts.

(c) That ramp equipment such as tie-downs, wheel-chocks, control blocks, and fire extinguishers are available and in good repair.

(d) That fueling equipment is properly identified, maintained in good repair, and equipped with adequate grounding devices.

(e) That emergency equipment such as life vests, rafts, signal devices is maintained in proper repair.

NOTE: Repair stations that are subject to other SWAP inspections will not be inspected as a function of pilot school inspections.

(4) *Personnel.* Maintenance personnel used by the certificate holder should have the technical ability and experience necessary to perform their assigned duties in an efficient manner:

(a) All persons directly in charge of maintenance shall be appropriately certificated.
(b) When the operator provides factory and or on-the-job training, the efficiency of maintenance personnel is greatly increased.

436.-499. *RESERVED.*

CHAPTER 7. SYSTEMSWORTHINESS ANALYSIS PROGRAM—OPERATIONS

SECTION 1. GENERAL PROCEDURES

500. *PURPOSE.* This section provides guidance and procedural instructions applicable to the Operations Systemsworthiness Analysis Program.

501. *PREPARATION AND PLANNING.* The Systemsworthiness Analysis Team should review and become familiar with the operator's policies and procedures as they pertain to the area to be analyzed and as set forth in his manuals. The objective of this review is to determine whether or not company policies and procedures are consistent with the provisions of the Federal Aviation Regulations, operating certificates, and operations specifications.

502. *OPERATOR'S ORGANIZATION, POLICIES AND PROCEDURES.* The authorities, responsibilities, tasks, and relationship of each position in the organization should be clearly and completely described in writing.

a. *Management Control.* This is one of the most important aspects of the systemsworthiness analysis. A good axiom is "competent management usually results in a safe operation." The person ultimately responsible for conducting a safe operation is the president of the company. Obviously, in a company the president must delegate authority down through the chain of command. It is important, therefore, that the principal inspector, during his briefing of the Systemsworthiness Analysis Team, outline the duties and responsibilities of key company officials. Deficiencies in this area might be caused by:

(1) *Management Irregularities.* This deficiency is usually reflected in the operator's compliance and/or safety record and immediate corrective action is in order.
(2) *Misinterpretation* of company policies by personnel at middle management or working level. Corrective action here might require additional training, recasting of company policy, or revision of company procedures to conform to company policy. The immediacy of the corrective action would depend upon the degree of severity.
(3) *Lack of communication* down through the chain of command. This might also indicate that management is not monitoring performance at the lower management levels and initiating timely corrective action. Again, the immediacy of corrective action would depend upon the circumstances.

b. *The analysis team* should be able to distinguish company policy from company procedures.

(1) *Company policy* is made by top level management, usually by the president or a senior operating official by delegation. This may vary, depending upon the size of the company. A review of the company's policy by the analysis team could well reveal that company policy is consistent with FAA requirements, but a review of company procedures might indicate them to be contrary to company policies.
(2) On the other hand, both policies and procedures could be found to be in conformance with FAA requirements, whereas the operator's practices are not. It is the responsi-

bility of the operator's management to carry out policy and procedures in accordance with regulatory requirements. If this does not result, then there is a breakdown in the operator's management system which could be due to a number of factors such as poor communications, no delegation of authority, lack of follow-up procedures, lack of supervision, or incompetent management personnel.

(3) *Sometimes it is difficult* to distinguish between policy and procedure. Reduced to the simplest terms, an operator's policy, for example, could be to comply with FARs but the procedures prescribed in his manual might permit continuance of flight with certain required items of equipment inoperative.

(4) *The following outline summary of the foregoing might be helpful:*

(a) Company policy determined by:	—Top management	
(b) Company policy must be consistent with:	—Regulations Operating Certificate Economic authority Operations Specifications	
(c) Company procedures determined by:	—Manuals Middle-management decisions Operations performance	
(d) Company procedures must be consistent with:	—Company policy Regulations Operations Specifications	
(e) Company policy carried out by:	—Middle management	
(f) Company procedures carried out by:	—Crewmembers and dispatchers	

503-509. *RESERVED.*

SECTION 2. AIR CARRIER OPERATIONS

510. *AIR CARRIER OPERATIONS ANALYSIS AREAS.*

a. *Records and Crew Scheduling.*

(1) Crewmember and dispatcher training records.
(2) Check airman and examiner records.
(3) Crew scheduling and procedures.
(4) Route and airport qualification records—pilot and dispatcher.
(5) Financial records—commercial operator.

b. *Facilities.*

(1) Communications/communication records.
(2) Dispatch and meterology.
(3) Airports/line station facilities.
(4) Flight following.
(5) Trip papers (load manifest, release, etc.).
(6) Operations forms.

c. *Flight Operations Policies and Procedures.*

(1) Dispatch/flight following.
(2) Management control.
(3) Operational control.
(4) Manuals and bulletins.

d. *Ground Station Personnel Training.*

(1) Operations representatives.
(2) Weight and balance techniques.
(3) Load masters.
(4) Cargo handlers.

511. *INSPECTION PROCEDURE.* Following the review of the operator's organization policies, and procedures, the team determines whether or not the actual operation is in accordance with company policies and procedures, the FAR, and operations specification by any or all of the following means:

a. *On site inspections of facilities.*
b. *Discussion with operator's personnel.*
c. *Records review.*
d. *Records and manual cross-checking.*
e. *Verification of operational problems* by checking ATS facility records.
f. *Violation and complaint review.*
g. *Accident and incident review.*
h. *Review of ACDO correspondence.*
i. *Discussions with ACDO personnel.*
j. *Financial evaluation.*
k. *Checking compliance* disposition and qualifications of company officials and airmen using compliance and security investigators, auditors, and regional counsel as deemed necessary.
l. *Discussions with ATC personnel and other operators.*
m. *Meet with principal inspectors and local representatives* of airmen organizations to discuss any items of mutual interest.
n. *Any other source of information pertinent to the analysis.*

512. *INSPECTION GUIDELINES.* These guidelines are designed to give the inspector a better idea of how the systemsworthiness analysis should be conducted by discussing several (but not all) of the subareas of the four analysis areas:

a. *Air Carrier Records and Crew Scheduling.* The inspector should determine the adequacy of the system for assuring that only QUALIFIED personnel are utilized in their areas of responsibilities.

(1) *Crewmember and Dispatcher Training Records.*

(a) *Training Records.* The inspector should spot-check the accuracy of the training records of crewmembers and dispatchers by verifying that the training was actually given on the date specified. In the case of flight training, this can be done by comparison

with the aircraft logbook page pertaining to the date in question. If further checking is necessary, the inspector might consider a review of flight plan information on file at Air Traffic Service (ATS) facilities or interrogation of the airmen concerned.

1 The inspector should also determine the adequacy of the procedures used for scheduling crewmembers for required training and checks.

2 If problems are encountered in this respect, inspector should discuss the matter with the person responsible for maintaining the training records.

3 From this discussion the inspector should determine the source of the problem which might be due to any of the following:

(a) The person in charge of the training records does not know his job, either through incompetency or he has not been properly trained. In either case the matter must be pursued further with higher echelon.

(b) Company practice not in conformance with company policies or procedures concerning company records.

(c) Incorrect interpretation of regulatory requirements.

(d) The recordkeeping system itself is overly complex as to preclude timely scheduling of required training and checks.

(2) *Check Airmen and Examiners Records.*

(a) The inspector should review the flight-checking records of company check pilots to determine whether certain check pilots either give a high percentage of down checks or never give a down check.

(b) These records should be compared with those flight checks conducted with an FAA inspector on board.

(c) Any significant differences in the percentage of down checks between individual check pilots, company check pilots and FAA inspectors, or individual FAA inspectors must be reported to the principal inspector for his resolution.

(3) *Facilities.* The inspector shall determine that the operator has a system to insure the continued adequacy of airports and facilities for the operations conducted.

(a) Does the system provide for public protection, wet runway operation, discontinuing operations when unsafe weather conditions exist, operations during airport or other construction affecting flight safety?

(b) When an operator's system is determined to be adequate, line station SAMPLING should be accomplished to assure that it operates. The selection of facilities to sample will be coordinated with the principal inspector.

(4) *Communications.* Determine whether company communications facilities provide adequate communications between the dispatch centers and aircraft in flight.

(a) The best and most practical ways of determining this are through personal observations and discussions with working dispatchers.

(b) If deficiencies are disclosed, the team will consult with the principal operations inspector to determine the required course of action.

(c) Corrective action will be initiated through the principal operations inspector either immediately or following the systemsworthiness analysis. In the latter case, the principal inspector should handle the matter

during the post-inspection briefing of the operator.

(5) *Dispatch and Meterology.* This area can best be handled by one or, at the most, two members of the systemsworthiness analysis team.

(a) This inspection should also encompass dispatch procedures, which is a sub-item under the policies and procedures analysis area.

(b) The dispatch center is the initial focal point at which all operations policies and procedures are translated into action.

(c) Prior to the inspection, it is most important that the inspector carefully review the dispatch policies and procedures prescribed in the air carrier's manual.

(d) The on-site inspection should entail, as a minimum, a complete 8-hour shift at the dispatch center during peak periods and during IFR weather conditions if possible.

(e) The inspector should observe pilot briefings and debriefings with particular emphasis on the terms and conditions of the dispatch release. Considerable time should be spent in observing flight-following and in discussions with working dispatchers.

(f) During the visit, the inspector must carefully note whether the dispatch function as carried out in practice is consistent with company policies and procedures.

(g) The inspector should determine whether dispatcher workload has any effect on safety. In this regard, note whether dispatchers are required to perform an excess amount of non-dispatch functions such as crew scheduling, clerical duties, relaying messages, etc. Additionally, determine that dispatchers are not being required to handle too many flights.

(h) Particular attention should be given to the procedures followed in the dispatch of a

flight to determine whether the dispatcher is sharing responsibility with the pilot in the release of the flight considering turbulent weather conditions, information on navigation facilities, airports, and compliance with the minimum equipment list. Also, that during flight the dispatcher provides the pilot with any additional available information which may affect the safety of the flight.

(i) Determine the adequacy of the operator's system for restriction or suspension of operations in conditions that are a hazard to safe operations.

(j) During visits to air carrier dispatch offices, inspectors should meet with individual dispatchers to obtain an impression of the dispatchers' knowledge of regulatory requirements and discuss mutual problems and possible resolutions. Deficiencies might be caused by:

1 Lack of knowledge of individual dispatchers which could be due to a lack of training or incompetence. In either case, pursue the matter further to higher echelon.

2 Inadequate company policies and/or procedures. Corrective action should be initiated through the principal inspector immediately or at the conclusion of the systemsworthiness analysis as dictated by the severity of the deficiency.

3 Incorrect application of regulatory requirements. In this case, immediate corrective action may be in order.

b. *Flight Operation Policies and Procedures.* Guidelines for the basic approach to this area are covered in operators' policies and procedures. In analyzing this area, attention should be directed toward problem systems such as:

(1) Transportation of dangerous/hazardous articles.

(2) Security and hi-jacking.

c. *Ground Station Personnel Training.* Although not required by regulation, many operators conduct formal training of ground station personnel. Team members should review the training curriculum applicable to such items as weight and balance, carriage of dangerous articles, security and hi-jacking, and ramp safety. One of the more significant aspects is the checking of load manifests for accuracy. If feasible, observations should be made of classroom instruction.

(1) Deficiencies such as individual incompetence, lack of training, or inadequate instructions may be detected. However, the objective is to determine if there is a practical system to train ground personnel.

(2) Give consideration to, and make recommendations relative to regulation of the training of ground personnel.

513.-599. *RESERVED.*

SECTION 3. GENERAL AVIATION OPERATIONS

560. *PURPOSE.* This section provides guidance and procedural instructions applicable to pilot training schools certificated and operated under the provisions of FAR 141 and air taxi/commercial operators of small aircraft certificated and operated under the provisions of FAR 135. The instructions and guidance material contained in Section 2 of this chapter will apply to air taxi/commercial operators of large aircraft certificated under the provisions of FAR 135.2.

561. *AIR TAXI/COMMERCIAL OPERATOR ANALYSIS AREAS.* The areas of the operator's systems selected for analysis are listed below. The areas are broken down into subareas which should be evaluated during the analysis. Normally, all operations systems will be evaluated during each SWAP visit to an operator. These guidelines are designed

to give the operator a better idea of how the systemsworthiness analysis should be conducted:

a. *Pilot Training Program.*

(1) *Curriculum.* The Pilot Training curriculum will be reviewed to determine that the operator's program is appropriate to the operations to which each required pilot is to be assigned. It should ensure that, if followed, each pilot will have the required knowledge and competence prior to his use in air taxi operations. Whenever possible, training periods should be observed. Analysis in this area should be directed toward possible system deficiency.

(2) *Records.* The inspector should spot check the accuracy of the training records of individual airmen by verifying that the training was actually given on the date specified. In the case of flight training, this can be done by comparison with the aircraft logbook page pertaining to the date in question. If further checking is necessary, the inspector might consider a review of flight plan information on file at Air Traffic Service (ATS) facilities or interrogation of the airman concerned.

(3) *Scheduling.* The inspector should determine the adequacy of the records and procedures used for scheduling required training and checks. If problems are encountered in this respect, the inspector should discuss the matter with the person responsible for maintaining training scheduling. Discrepancies noted in the above categories might be caused by:

(a) The person in charge does not know his job either through incompetency or he has not been properly trained. In ei-

their case the matter might be pursued further with higher echelon.

(b) Company practice not in conformance with company policies or procedures concerning company records.

(c) Incorrect interpretation of regulatory requirements.

(d) The recordkeeping system itself is overly complex as to preclude timely scheduling of required training and checks.

(4) *Competency.* An appropriately rated team member will conduct en route inspections, observe training flights, and conduct or observe a proficiency check during the course of the SWAP visit. This will be a sampling process and it is not intended that the team will evaluate all pilots in all types of pilot checks during a normal scheduled analysis. Deficiencies revealed during the sampling process might be caused by any of the following:

(a) The airman did not receive adequate training which in turn might be due to inadequate instruction.

(b) The airman is unable to remain proficient between required training periods. If this is the case, a reexamination of the airman is in order.

(c) It may be only a simple case of "check-i-tis."

(d) Training policies and procedures are inadequate which could either require immediate action through the principal inspector or action following completion of the analysis depending upon the circumstances.

b. *Flight Attendant Training Program.*

(1) *Curriculum.* Team members should determine whether the training curriculum meets the requirements for initial and recurrent training. This should be done by a review of the operator's training program and whenever feasible by observing classroom instruction, emergency drills, passenger briefing procedures, and by discussions with indivdual flight attendants.

(2) *Records.* The inspector will spot-check the accuracy of the training records of individual flight attendants to verify that the required training was actually given.

(3) *Competency.* The inspector will, during en route inspections, determine the competency of the flight attendant. This can be accomplished by observing the actions of the individual and comparing these with procedures contained in the operations manual.

(4) *Discrepancies noted* in the above categories might be caused by:

(a) The individual does not know his job either through incompetency or he has not been properly trained.

(b) Company practice is not in conformance with company policies or procedures.

(c) Incorrect interpretation of regulatory requirements.

c. *Flight Operations Policies and Procedures.* During the en route inspection, the inspector can verify whether company policies and procedures as described in the operator's manual are carried out in actual practice. The inspector should:

(1) Determine whether the flight was properly dispatched. An important aspect of the dispatch procedure is a determination that the flight was released in accordance with the applicable requirements.

(2) Direct their efforts toward the detection of system deficiencies rather than individual discrepancies.

562. *PILOT TRAINING SCHOOL ANALYSIS AREAS.*

The areas of the operator's systems selected for analysis during each SWAP visit are set forth below:

a. *School Management.* The organization's system for communications between management, instructors, students, and other person concerned, to produce safe and effective training operations should provide a system to assure that:

(1) Recordkeeping is in compliance with Part 141 of the FARs and quality of instruction.

(2) Aircraft and equipment used are in airworthy condition and capable of performing for the lesson assigned before a student is dispatched for a flight.

b. *Quality of instruction depends upon the:*

(1) Relationship of the training received by students to that which is provided in the approved curriculums.

(2) Comparison of approved course curriculums to minimum standards of quality of instruction contained in Appendices A, B, and C, of Part 141.

(3) Procedure for acceptance of a student having previous pilot training leading to the course objective for enrollment in an approved course.

(4) Adequacy of time allotted to each lesson for post and preflight discussions with students by flight instructors.

c. *Personnel.* The following should be considered in evaluating pilot school personnel:

(1) Number of ground and flight instructors serving approved training courses.

(2) Familiarization of ground and flight instructors with the pertinent provisions of the FARs and approved curriculums.
(3) Students dispatched on solo flights under flight instructor's authority.
(4) Relationship of chief, flight instructor's performance with the prescribed responsibilities and requirements contained in FAR 141.
(5) Chief, flight instructor's procedure for monitoring instruction of other instructors and their proficiency.

d. *Aircraft and Equipment.* Give consideration to:

(1) Capability of aircraft and equipment for effective use in the curriculum approved.
(2) Adequacy of ground school equipment for the conduct of the approved courses.
(3) Adequacy of equipment and information for flight planning, weight and balance computations, and aircraft performance data for the courses approved.

563.-569. *RESERVED.*

GLOSSARY OF TERMS

SYSTEM—An array of components composed of policy formulation, organization clarification, standards of performance, individual analysis, help and information needed, sources of help and information needed, time schedules, and controls designed to work in unison and harmony towards a predetermined objective and ultimate goal.

SYSTEMSWORTHINESS ANALYSIS PROGRAM (SWAP)—A process of breaking a system down into its component parts for the purpose of assessing and reporting the worth of each component part and subsequently the entire system.

SUBSYSTEM—A major component of an entire system such as a procedure. A subpart of a system that is an integral part of a larger system.

ELEMENT OF A SYSTEM OR SUBSYSTEM—An essential resource such as money, manpower, machines, equipment, tools, space, material supplies, training, safety precautions, utilities, morale or other items of need essential to the suitable functioning of a system or subsystem.

ANALYSIS—A series of processes or techniques used in breaking a system down into its components and elements to aid in the process of measuring the worth and value of each component and element comprising the system. Analysis is a penetrating inquiry into the nature of things as to effect and cause relationships to aid the decision maker make a choice between possible alternatives and consequences.

SEVEN CONSTANT COMPONENTS OF ALL GOOD SYSTEMS

1. *POLICY FORMULATION*—Statements of intent.
   a. *GENERAL POLICIES*—Statements of ultimate purpose.
   b. *MAJOR POLICIES*—Statements of Intermediate objectives, quantifiable, qualitative, and timeliness.
   c. *DEPARTMENTAL POLICIES*—Methods and procedures for achieving objective.
2. *ORGANIZING*—Process of dividing the work to be done to reach the objectives sought. Assigning and limiting responsibility and authority, establishing working relationships channels for coordination and cooperation.
3. *STANDARDS OF PERFORMANCE*—Results expected from organizational elements, persons or items. Reasonable and attainable results expected from persons, items or things.
4. *INDIVIDUAL ANALYSIS*—Profiling position requirements, profiling of man specification, matching the two profiles and determining a course of action.

5. *HELP AND INFORMATION NEEDED*—Tools, machines, equipment, supplies, etc., and training individuals in their use, guidelines, directives, and the like.
6. *SOURCES OF HELP AND INFORMATION*—Policy, organization and procedure manuals. Specifications, blue prints, regulations, laws, reports, publications, texts, etc., training centers.
7. *TIME SCHEDULES*—Target dates, deadlines, time controls compatible with quantity and quality desired.

PRINCIPLE—A fundamental truth, FAR, a rule of thumb, guiding belief, a common practice a conventional way.

PROCESS CHART—A method for breaking a compound procedure down into its sequential steps. A detailed record of the successive steps in an activity or process. It sets down in chronological order everything that is done.

BEFORE STUDY—A process chart showing a process or procedure as it is currently being done.

AFTER STUDY—A process chart showing a proposal for modifying a current process.

SIGNIFICANT—Having possible effect on safety or compliance with applicable rules.

SURVEILLANCE—A continuing and intermittent inspection of a system or combination of systems and procedures. A reconnaissance survey, a close watch over events and trends to insure compliance with norm, regulation or standard practice(s).

APPRAISAL—An analysis of the worth or values of a system, item or thing. A surfacing of defects, a penetrating comparison of what-is with what-ought-to-be.

STANDARD—A device for measuring something, a result expected, a norm established by common practice, a description of what ought to be, a reasonably attainable objective or goal, a measure of quantity, quality and timeliness.

PROCEDURE—A process, routine, or prescribed sequence of steps or tasks to produce a desired result.

INSPECTION—A purposeful observation of an event, a document item or thing to closely examine quantity, quality or timeliness, compliance with regulation, norm, good standard practice, and safety. A close look at the performance of people and things.

EFFICIENCY PRINCIPLES IN ANALYSIS—An analytical technique using proven fundamental truths to aid the analyst or decision makers isolate defective areas, and provide clues for recommending choices from among proven alternative courses of action.

VERTICAL ANALYSIS—An analytical technique designed to aid the analyst or decision maker organize his thinking, diagnose a situation, reduce general situations to specific problems, eliminate trivia, clearly associate effect with cause and relate cure to cause, avoid treating symptoms rather than cause, and prepare preliminary reports.

STATISTICAL ANALYSIS—An analytical technique designed to aid an analyst or decision maker analyze quantitative data past, current and future; draw conclusions and inferences, project trends, and choose alternatives based on quantitative values.

COST/BENEFIT/EFFECTIVENESS ANALYSIS—An analytical technique designed to aid the decision maker, analyze, compare, and weigh the consequences of alternative courses of action against each other. A technique to aid in the process of persuasion.

VALUE ANALYSIS—An analytical technique designed to aid the decision maker make a best choice of alternative intangible values for improved effectiveness of resources.

NORMAL PROCESS OF SYSTEMS INSPECTION AND ANALYSIS (FIGURE 1)

1. Observe, using the 7 constant components to identify apparent problem areas.

2. Observe, using the principles to break the problem areas down further.
3. Observe, using the vertical analysis technique to further reduce the problem areas to more specific defects, causes and cures.
4. As determined by step 3, select the most suitable analytical or procedural technique to pinpoint the specific problem.
5. As determined by steps 3 and 4, use cost/benefit/effectiveness analysis to choose between alternatives available which reflect objective data.
6. As determined by 3, 4 and 5 use value analysis on subjective data.

All or any of the techniques will aid in selling the teams' recommendations.

[CHANGE] [8000.3C CHG 1]

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Washington, D.C.

5/7/73
Cancellation
Date: after
filing

SUBJ: SYSTEMSWORTHINESS ANALYSIS PROGRAM

PURPOSE. This change provides revised information concerning SWAP inspection notification requirements and corrects two minor typographical errors on pages 349 and 350.

PAGE CONTROL CHART

Remove Pages	Dated	Insert Pages	Dated
101 thru 106 (thru 150)	4/14/72	101	5/ 7/73
		102	4/14/72
349 and 350 (thru 360)	4/14/72	103 thru 106 (thru 150)	5/ 7/73
		349 and 350 (thru 360)	5/ 7/73

/s/ C. R. Melugin, Jr.
Acting Director,
Flight Standards Service

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CHAPTER 3. HOW SYSTEM FUNCTIONS

100. *SCHEDULED SYSTEMSWORTHINESS ANALYSIS.* Tentative schedule of inspections will be prepared by SWAP covering at least a six-month period and distributed to the district offices.

This schedule will identify the name, address, type of certificate(s) and inspection date of each operator involved. When the principal inspector receives the SWAP schedule, written notification will be forwarded to the operators involved advising them of the intended dates of the SWAP visit.

101. *SPECIAL SYSTEMSWORTHINESS ANALYSIS.* Special systemsworthiness analysis will be conducted on an as-needed basis and may be requested by Washington headquarters, the regional office, or district office whenever there are indications that the performance of a particular operator is falling below an acceptable level. The procedures employed are the same as those followed in a scheduled analysis, except that the analysis is concentrated on those areas of operators' systems that are suspected of being deficient. Some conditions that would warrant a request for a special analysis are adverse trends in:

a. *Accidents and incidents.*

b. *Violations and complaints.*

c. *Financial condition.* Some examples of indications of financial stress that can be detected by inspectors are:

(1) Demands for "cash on delivery" by suppliers who formerly allowed credit.

(2) Curtailment of flight operations.

(3) Significant layoff of personnel.

(4) Significant employee turnover.
(5) Delays in meeting payrolls.
(6) Sale or repossession of aircraft.
(7) Inadequate maintenance of aircraft.

d. *Repetition of the same types of difficulties reported* under the Mechanical Reliability Reports (MRR) system over an extended period of time.

e. *Consistently high number of items* on the Mechanical Interruption Summary Reports (MIS).

f. *High percentage of uncompleted pilot-in-command flight checks.*

g. *High percentage of complaints concerning safety items.*

102. *TEAM BRIEFING.* The team leader, or the inspector designated as being in charge of the particular analysis, will brief the team members prior to the start of the inspection. This briefing should include the inspection plan, the inspection and analytical techniques to be used, the specific areas to be assigned to each team member, team conduct and actions in working with the operator, and the estimated time to complete the inspection. This briefing should also include any special information available from other sources such as MRR data, financial information and complaints. Team members will be cautioned not to discuss any of the team findings, conclusions, or opinion with anyone other than team members and appropriate agency personnel prior to the post-inspection briefing of the operator.

103. *DISTRICT OFFICE CHIEF OR PRINCIPAL INSPECTOR BRIEFING.* The Systemsworthiness Analysis team will be thoroughly briefed (operations or maintenance/avionics as appropriate) prior to the start of the inspection. This briefing should cover:

a. Operators' management structure and flow of responsibilities in the areas to be inspected.

b. Identify company personnel that the operator desires to be involved with inspection activities.

c. Discuss existing compliance posture of operator as related to inspection elements.
d. Identify known or suspected problem areas and status of any corrective action.
e. Review incident, accident, violation records of operator since the previous inspection of the elements involved and any trends determined or suspected.
f. Make requests for specific information or determinations to be obtained during inspection.
g. Information regarding operator/employee relationships, financial condition, new programs or plans, operator/FAA relationships.
h. Any other factors that could adversely affect the operators' performance or be of assistance to the teams.

104. *OTHER BRIEFINGS.* The inspection team will have free access to manuals, correspondence, and records pertaining to the operator, and any other appropriate data maintained by district offices. All material and data pertinent to the inspection will be studied by the team to acquaint them with the operator's policies, instructions, and procedures. It is essential that the team has a good working knowledge of the operator's management policies and procedures applicable to the area to be investigated before they meet with the operator. In this manner, the team will be better equipped to discuss intelligently the policies and procedures used by the operator in the direction and control of his enterprise.

105. *INITIAL MEETING WITH THE OPERATORS.*

a. *The district office chief or principal inspector shall arrange* for and chair the initial meeting of the inspection team and the operator. He will explain the purpose and scope of the inspection. In cases where a problem area is suspected to exist, it should be frankly discussed with the operator. This straight-forward approach will help to foster a feeling of mutual trust and respect that is beneficial, if not essential, to the

analysis. At this time, the operator will be advised that he will be informed of the team's findings at a meeting to be arranged by the district office at the conclusion of the inspection. The operator should be invited to stipulate any special areas that he would like the team to examine.

b. *At the initial meeting of SWAP and the operator*, the team leader will furnish the operator a written itinerary of the SWAP team including dates that facilities, subcontractors, suppliers, etc., will be visited. The operator should be advised that it will be his responsibility to advise the areas of the intended visits. This procedure will not apply to en routes, pilot proficiency checks or airman certification functions.

c. *The operator should also* be advised that experience has shown that rumors relating to FAA findings while the inspection is in progress are not unusual and should be disregarded. Such rumors usually stem from the searching nature of the questions posed by members of the team. Team members will normally not discuss findings with the operator's personnel during the onsite inspection. However, if a serious safety problem is disclosed during the inspection, the operator and the district office will be informed immediately by the SWAP team of the facts available so that prompt corrective action can be taken.

106. *THE SYSTEMSWORTHINESS ANALYSIS PROCESS.*

a. *As an essential preliminary*, each team member will familiarize himself with the operator's policies, organization, reporting system (records), and directives which govern the particular area to be analyzed. During the review and analysis, the team member should make notes and references to serve as memory-joggers during the inspection. This will minimize the need for subse-

quent research of manuals, records, and files to ascertain a specific practice or directive.

b. *A successful systemsworthiness analysis* requires careful fact finding and objective analysis. When a defect or questionable area is detected, a thorough search must be made to trace it back through the system to the causal point of origin. The inspector must concentrate on the area under analysis and pursue it to a positive completion so that a factual determination can be made.

This may occasionally involve consideration of other areas that were not originally intended for inspection. When this occurs, the new area should be investigated until factual conclusions can be drawn. It is important, however, that the inspector return to the area under consideration before he was sidetracked, since any loss of continuity could result in erroneous or incomplete findings.

c. *Defects existing in any organization* may result from a variety of causes. The team should be particularly alert to indications of inadequate communication or followup procedures and lack of effective delegations of authority. Identifying the defects and isolating the factors contributing to them may be expedited by applying the following procedures:

(1) *Lack of Supervision.* Check for the adequacy and understandability of instructions and directives, the training and competency of personnel. In this respect, do employees understand and effectively carry out company policies and procedures?

(a) Determine whether proper delegations of authority are made down through the organization. It is one thing to delegate authority and another to see that delegated authority is carried out effectively in accordance with established policies and procedures.

(b) The team must evaluate the adequacy of control exercised by management by determining how management follows up in order to ascertain policy and procedural compliance.

(c) Even if company policy is carried out through the organization, the basic policy or procedure could be wrong.

(2) *Inadequate Procedures.* Determine whether or not procedures are set forth clearly and are practicable of accomplishment.

(a) When analysis of a problem area discloses that existing instructions are inadequate or the system used in implementing instructions lacks proper definition, detail, or sensibility, then procedures should be the prime area of concern.

(b) Past inspections have revealed extremely cumbersome or impractical airman records systems. In those cases, inspections have disclosed violations of flight time limitations or failure to schedule crewmembers for required recurrent training. Past inspections have also disclosed areas where procedures were needed, but none were provided.

(c) It is imperative that the operator has established adequate procedures to monitor compliance with company policy and FAR requirements.

(3) *Fraudulent Records.* When the team suspects that the operator is falsifying his records, assistance by regional Air Transportation and Security, Audit and Legal personnel may be necessary.

(a) A simple cross-checking of company records may reveal discrepancies such as checking aircraft logbooks against training records.

(b) Another technique successfully used in the past has been to check flight plan information available in ATS facilities against company records.

(4) *The art of asking the right question* at the right time and of the right person is one of the key attributes of a successful systemsworthiness analysis. This art should be employed continuously by team members during an inspection, since it serves to expose abstract areas, confirms or disproves adherence to the established systems, and provides an insight into the acceptance and applicability of established policies and procedures.

d. *Team members* should not confine their inquiries to any particular group of personnel or organizational level. It may be anticipated that supervisory personnel ought to be well-versed in the policies, organization, and procedures governing the work functions for which they are responsible. However, they may be unaware of trouble spots existing at lower echelons or shortcuts taken at the working level that may adversely affect compliance with the regulations and accepted standards of safety.

107. *POST-INSPECTION MEETING WITH THE OPERATOR.* The district office chief or the principal inspector shall arrange for, and serve as agency spokesman in the post-inspection meeting with the operator. All findings discussed at the meeting must be fully supported by facts acquired by the team. However, the operator should be given ample opportunity to present additional facts which he feels mitigate defects found by the inspection team.

108.-199. *RESERVED.*

f. *Maintenance Performance.* Maintenance performance is the function generally referred to as "maintenance" and includes responsibility for

actual work processes of overhaul, repair, alteration, adjustment, and checks of the aircraft and its systems and components.

(1) The maintenance performance organization must possess capability through adequate facilities, competent personnel, practical instructions and procedures, attainable standards, and effective controls regardless of variations in size and complexity. Careful evaluation of these factors is essential to a successful analysis of the maintenance function. The following questions are directed toward making such a determination:

(a) What is the line of authority and responsibility of mechanics? What is relationship of maintenance organization to purchasing, training, inspection, engineering, and production control? Where in the organization do these segments answer to a common head?

(b) Under what condition can "maintenance" deviate from published standards?

(c) What level of supervision can fire and hire? Issue reprimands for record?

(d) What is general level of mechanic intelligence as indicated by his educational background, formal schooling, trade schools, etc.? What is mechanic expected skill level as indicated by his experience with the company and with industry? Are mechanics assigned work on a specialist's concept? How many mechanics are certificated?

(e) Are adequate tools, manuals, and facilities available?

(f) Are contract mechanics used at line stations?

(g) What is source of newly hired mechanics? Do mechanics move about system?

(h) Is there a system established by which a deficiency found by mechanics can be made known to personnel with authority for having it corrected?

g. *Performance Analysis* is a function of the overall maintenance system which evaluates product performance and identifies problem areas.

(1) *It detects deficiencies*, signals the need for corrective action, and monitors the effect of the action. It provides inputs to the engineering department to effect modification, to quality control to provide standards, to inspection to revise techniques, to production control to provide rescheduling, etc., inherent in this activity, is data collection and technical investigation.

(2) *Analysis of the procedures and control* exercised by this organization and the effectiveness of their coordination with other organizational elements should be carefully considered. Following are typical questions for analysis in this area:

(a) What is the source of basic information on service difficulties? Is there more than one source? What are they? Are any useful sources being overlooked or omitted?

(b) Are these adequate instructions for completion of reports on service difficulties? Are they understandable? Are they usable? Are they followed?

(c) Is there a system for reporting difficulties encountered during operation of aircraft? During overhaul? During routine inspection?

(d) Is responsibility for reporting difficulties spelled out in sufficient detail to be meaningful?

(e) Who is this information directed to? Do they get it all?

(f) Does each department receive and analyze its own difficulties? How are upper echelons advised of how the operation is going.

(g) Are personnel analyzing difficulties capable and trained to perform this function?

(h) What is required to initiate corrective action once a problem has been identified? Is the responsibility for implementing this requirement spelled out?

(i) What use is made of industry's problems in analyzing the difficulties being experienced by the air carrier?

(j) Are fixes established based on problems being encountered by industry before they occur on the carrier being analyzed? Are MRR reports used for this purpose?

(k) Are boards of inquiry established for major problem areas such as engine failures, structural failures, etc.? Who makes up this board?

402.-429. *RESERVED.*

[CHANGE] [8000.3C CHG 2]

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

12/11/73
Cancellation
Date: After
filing

SUBJ: SYSTEMSWORTHINESS ANALYSIS PROGRAM

1. *PURPOSE.* This change provides information concerning SWAP and district office coordinating work program.

2. *EXPLANATION.* This change aligns Order 8000.3C with Handbook 1800.12C to provide for the SWAP team conducting the programmed portion of the district office program.

PAGE CONTROL CHART

Remove Pages	Dated	Insert Page	Dated
1 thru 52 (thru 100)	4/14/72	1 (thru 50)	12/11/73
		51	4/14/72
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/s/ C. R. Melugin, Jr.
Acting Director,
Flight Standards Service, AFS-1

Distribution: WRCMFS-3, FFS-1, 2, 3, 5, 7, 8 (all employees); FIA-O (minimum); AAC-955 (80 copies)

Initiated By: AFS-320

CHAPTER 1. POLICIES AND OBJECTIVES

1. *GENERAL.* The Flight Standards Systemsworthiness Analysis Program is a systems approach to fulfill agency responsibilities for inspection and surveillance of operators having formalized systems that cannot be monitored effectively using customary surveillance techniques. It is aimed at determining the causal factors which allow a system to deteriorate rather than the symptoms that are a result of such deterioration. The task of the SWAP team is to supplement the process of surveillance with an indepth analysis of operators' systems and subsystems to determine if system objectives are being achieved. SWAP augments the district office (DO) permitting the principal inspector to maintain surveillance of the overall posture of the operator. The key features of the Systemsworthiness Analysis Program are:

   a. *Modifying maintenance and operations surveillance inspection practices* to a comprehensive systemsworthiness concept in order to effect better utilization of district office inspector personnel.
   b. *Utilizing teams of inspectors* to perform programmed and special inspections, to relieve district office inspectors from doing necessary and time-consuming indepth analysis.
   c. *Employing sophisticated analytical techniques on* performance and reliability data to better point inspection efforts toward critical areas.
   d. *Defining the relationship and roles of the SWAP and district office inspector* as related to systemsworthiness analysis activities.

2. *MAJOR POLICY OBJECTIVES.* The objective of the Systemsworthiness Analysis Program are to:

   a. *Provide more efficient utilization* of inspector personnel, both DO and SWAP.
   b. *Provide an accurate and penetrating analysis* of all components of the operator's systems.

c. *Improve the quality of FAA inspections* of air carriers, commercial operators, air travel clubs, air taxi operators, repair stations, airmen schools, and other appropriate industry segments.
d. *Improve the effectiveness of primary agency representatives* in the district office.
e. *Reduce*, to the maximum extent practicable, indepth inspections by district office inspectors assigned to an operator to permit these inspectors to maintain surveillance of the overall posture of the operator to determine any sensitive areas which may require examination by the SWAP team.

3. *WITHDRAWN*—CHANGE 2.

4.-49. *RESERVED.*

CHAPTER 2. ORGANIZATION

50. *MISSION AND FUNCTIONS.* SWAP teams are established as an element to the Flight Standards Division/Staff to perform indepth analysis of commercial aviation operators. The product of the team effort is a report of findings and recommendations and is provided to the air carrier/general aviation district office chief and/or principal inspectors who have responsibility for determining what corrective action is to be taken. To the extent practicable, each region will conduct systemsworthiness analysis of assigned operators on a systemwide basis.
51. *STRUCTURE.* A SWAP team should be established in each region. Regions that do not have an FAR 121/123/127 operator that is subject to a SWAP inspection shall not be established or continue an air carrier SWAP organization. Team members will be responsible to a chief as determined by regional organizational flow chart.
52. *SELECTION PLACEMENT AND DEVELOPMENT OF SWAP INSPECTORS.* Since the success of the Systemsworthiness Analysis Program

depends in no small part of the quality of the personnel selected, particular attention should be given to the choice of the team members. In addition to the basic experience and tactical qualifications required of an inspector, the following is considered essential:

Basis of Selection.

a. Broad technical training and experience.
b. Indoctrinated in the techniques of Systems Analysis.
c. Demonstrated ability to analyze systems effectively.
d. One year experience in a D.O. at the journeyman level.
e. Demonstrated ability to communicate effectively including oral and written presentations.

53. *PHYSICAL LOCATION.* Each regional director, or Assistant Administrator, European Region, having certificate responsibility, shall determine the location(s) of the SWAP team(s) based on the location of major workload, facilities, travel and per diem requirements, etc. The use of split teams is a prerogative of the regional director and is recommended where efficiency, expenses, team morale, etc., are significant factors.
54. *TEAM COMPLEMENT.* The size and makeup of the team required to perform a scheduled or special analysis will vary depending on the number of functional areas to be covered, the size and complexity of the operator, etc. Team assignments and scheduling are the responsibility of the Chief, Systemsworthiness Analysis.
55. *ORGANIZATIONAL RELATIONSHIP OF SWAP TEAM AND DISTRICT OFFICE.* The team will support the district office by providing reliable reports of facts, analysis and conclusions as a result of their systems analysis of an operator. The team will also accomplish that portion of the district office's work program established in accordance with Handbook 1800.12C.

The district office and the team will work in close harmony to accomplish the FAA's objective.

While the team is conducting an inspection they should keep the district office advised of their progress. If a serious safety problem is disclosed during the inspection, the district office will be informed immediately so that prompt corrective action can be taken.

56. *RECOMMENDATIONS FOR REGULATORY CHANGES.* The SWAP team is in an excellent position for detecting the need for amendments to the FARs. Team members are encouraged to submit proposed changes to the FARs by separate letter to the Regional Chief, Flight Standards Division/Staff for further forwarding to Washington Headquarters.

57.-99. *RESERVED.*

CHAPTER 3. HOW SYSTEM FUNCTIONS

100. *SCHEDULED SYSTEMSWORTHINESS ANALYSIS.* Tentative schedule of inspections will be prepared by SWAP covering at least a six-month period and distributed to the district offices.

This schedule will identify the name, address, type of certificate(s) and inspection date of each operator involved. When the principal inspector receives the SWAP schedule, written notification will be forwarded to the operators involved advising them of the intended dates of the SWAP visit.
Every effort will be made to adhere to the published inspection dates. They will be considered firm and changed only after serious consideration and full coordination between SWAP and the district office concerned.

101. *SPECIAL SYSTEMSWORTHINESS ANALYSIS.* Special systemsworthiness analysis will be conducted on an as-needed basis and may be requested by Washington headquarters, the regional office, or district office whenever there are indications that the

performance of a particular operator is falling below an acceptable level. The procedures employed are the same as those followed in a scheduled analysis, except that the analysis is concentrated on those areas of operators' systems that are suspected of being deficient. Some conditions that would warrant a request for a special analysis are adverse trends in:

a. *Accidents and incidents.*
b. *Violations and complaints.*
c. *Financial condition.* Some examples of indications of financial stress that can be detected by inspectors are:
   (1) Demands for "cash on delivery" by suppliers who formerly allowed credit.
   (2) Curtailment of flight operations.
   (3) Significant layoff of personnel.
   (4) Significant employee turnover.
   (5) Delays in meeting payrolls.
   (6) Sale or repossession of aircraft.
   (7) Inadequate maintenance of aircraft.
d. *Repetition of the same types of difficulties reported* under the Service Difficulty Reports (SDR) system over an extended period of time.
e. *Consistently high number of items* on the Mechanical Interruption Summary Reports (MIS).
f. *High percentage of uncompleted pilot-in-command flight checks.*
g. *High percentage of complaints concerning safety items.*

102. *TEAM BRIEFING.* The team leader, or the inspector designated as being in charge of the particular analysis, will brief the team members prior to the start of the inspection. This briefing should include the inspection plan, the inspection and analytical techniques to be used, the specific areas to be assigned to each team member, team conduct and actions in working with the operator, and the estimated time to complete the inspection. This

briefing should also include any special information available from other sources such as SDR data, financial information and complaints. Team members will be cautioned not to discuss any of the team findings, conclusions, or opinions with anyone other than team members and appropriate agency personnel prior to the post-inspection briefing of the operator.

103. *DISTRICT OFFICE CHIEF OR PRINCIPAL INSPECTOR BRIEFING. The* Systemsworthiness Analysis team will be thoroughly briefed (operations or maintenance/avionics as appropriate) prior to the start of the inspection. This briefing should cover:

a. Operators' management structure and flow of responsibilities in the areas to be inspected.
b. Identify company personnel that the operator desires to be involved with inspection activities.
c. Discuss existing compliance posture of operator as related to inspection elements.
d. Identify known or suspected problem areas and status of any corrective action.
e. Review incident, accident, violation records of operator since the previous inspection of the elements involved and any trends determined or suspected.
f. Make requests for specific information or determinations to be obtained during inspection.
g. Information regarding operator/employee relationships, financial condition, new programs or plans, operator/FAA relationships.
h. Any other factors that could aversely affect the operators' performance or be of assistance to the teams.
i. That portion of the district office program SWAP will accomplish.

104. *OTHER BRIEFINGS.* The inspection team will have free access to manuals, correspondence, and records pertaining to the operator, and any other appropriate data maintained by district offices. All

material and data pertinent to the inspection will be studied by the team to acquaint them with the operator's policies, instructions and procedures. It is essential that the team has a good working knowledge of the operator's management policies and procedures applicable to the area to be investigated before they meet with the operator. In this manner, the team will be better equipped to discuss intelligently the policies and procedures used by the operator in the direction and control of his enterprise.

105. *INITIAL MEETING WITH THE OPERATORS.*

a. *The district office chief or principal inspector shall arrange* for and chair the initial meeting of the inspection team and the operator. He will explain the purpose and scope of the inspection. In cases where a problem area is suspected to exist, it should be frankly discussed with the operator. This straight-forward approach will help to foster a feeling of mutual trust and respect that is beneficial, if not essential, to the analysis. At this time, the operator will be advised that he will be informed of the team's findings at a meeting to be arranged by the district office at the conclusion of the inspection. The operator should be invited to stipulate any special areas that he would like the team to examine.
b. *At the initial meeting of SWAP and the operator,* the team leader will furnish the operator a written itinerary of the SWAP team including dates that facilities, subcontractors, suppliers, etc., will be visited. The operator should be advised that it will be his responsibility to advise the areas of the intended visits. This procedure will not apply to en routes, pilot proficiency checks or airman certification functions.
c. *The operator should also* be advised that experience has shown that rumors relating to FAA findings while the inspection is in progress are not unusual and should be disregarded. Such

rumors usually stem from the searching nature of the questions posed by members of the team. Team members will normally not discuss findings with the operator's personnel during the onsite inspection.

106. *DISTRICT OFFICE CHIEF OR PRINCIPAL INSPECTOR BRIEFING.* The Systemsworthiness Analysis team will debrief the district office at the conclusion of their inspection. At this meeting all findings will be discussed prior to meeting with the operator, thereby preparing the agency spokesman for the post-inspection meeting with the operator. At this time the team will also furnish the district office with copies of appropriate FAA forms covering that portion of the district office work program accomplished by the team.

107. *POST-INSPECTION MEETING WITH THE OPERATOR.* The district office chief or the principal inspector shall arrange for, and serve as agency spokesman in the post-inspection meeting with the operator. All findings discussed at the meeting must be fully supported by facts acquired by the team. However, the operator should be given ample opportunity to present additional facts which he feels mitigate defects found by the inspection team.

108.-199. *RESERVED.*

[CHANGE] [8000.3C CHG 3]

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

7/24/74
Cancellation
Date: after
filing

SUBJ: SYSTEMSWORTHINESS ANALYSIS PROGRAM

PURPOSE: This change realigns the contents of this Order in a more realistic fashion, and introduces a new reporting procedure using FAA Form 8000-27.

PAGE CONTROL CHART

Remove pages	dated	Insert pages	dated
iii and iv	4/14/72	iii and iv	7/24/74
151 thru 348	4/14/72	151 thru 401	7/24/74
349 and 350 (thru 360)	5/ 7/73		
361 thru 434	4/14/72		
Appendix 1 pages 1 thru 3	4/14/72	Appendix 1 pages 1 thru 5	7/24/74
		Appendix 2 pages 1 and 2	7/24/74

/s/ R. P. Skully
R. P. SKULLY
Acting Director, Flight Standards Service

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CHAPTER 4. SYSTEMSWORTHINESS ANALYSIS PROGRAM

200. *PURPOSE.* This chapter provides guidance and procedural instructions applicable to the subsystems within the overall Flight Standards Systemsworthiness Analysis Program.

201. *OBJECTIVE.* The Systemsworthiness Analysis Program applies techniques to assure:

a. *An adequate and penetrating assessment* of all elements of the operator's systems.

b. *Improved effectiveness* of all surveillance functions through analysis of the vital elements of the operator's systems.

c. *The acquisition of factual data* relating to the status of the operator's compliance with applicable Federal Aviation Regulations.

d. *A factual determination* of the operator's systems to provide safe operations.

202. *THE ANALYSIS PROCESS.* This is the process by which the team conducts an inspection of the assigned areas of an operator's systems. The team members will familiarize themselves with the operator's organization, policies, reporting system (records), and directives which govern the areas to be analyzed.

The team verifies the application, acceptance and comprehension of top management policies at all levels. When only partial application, acceptance or comprehension is found, the cause or causes for deviations must be determined. It is imperative that the glossary of terms and definitions set forth in Appendix I be referred to in accomplishing a systems analysis.

a. *Identify and Isolate Defective Areas.* A successful systemsworthiness analysis requires careful fact finding and objective analysis. When a defect or questionable area is detected, a thorough search must be made to trace it back through the system to the causal point of origin.

This occasionally may involve consideration of other areas that were not originally intended for inspection. When this occurs, the new area should be investigated only enough to reach a factual conclusion. Then the inspector must return to the original area of inspecton, since any loss of continuity may result in erroneous or incomplete findings.

Defects existing in any organization may result from a variety of causes. The team should be particularly alert to indications of inadequate communications or follow-up procedures and lack of effective delegation of authority. Identifying and isolating the defects may be accomplished more readily by evaluating these areas first.

(1) *Supervision.* Check for the adequacy and understandability of instructions and directives, the training and competency of personnel. In this respect, do employees understand and effectively carry out company policies and procedures?

(a) *Determine* whether proper delegations of authority are made down through the organization. It is one thing to delegate authority and another to see that delegated authority is carried out effectively in accordance with established policies and procedures.

(b) *The team must evaluate* the adequacy of control exercised by management by determining how management follows up in order to ascertain policy and procedural compliance.

(c) *Even if company policy is carried out* through the organization, the basic policy or procedure could be wrong.

(2) *Manual and Written Procedures.* Determine whether or not procedures are set forth clearly and are practicable of accomplishment.

(a) *When analysis of a problem area* discloses that existing instructions are inadequate or the system used in implementing instructions lacks proper definition, detail, or sensibility, the procedures should be the prime area of concern.

(b) *Past inspections have revealed* extremely cumbersome or impractical airman records systems. In those cases, inspections have disclosed violations of flight time limitations or failure to schedule crewmembers for required recurrent training. Past inspections have also disclosed areas where procedures were needed, but none were provided.

(c) *It is imperative* that the operator establish adequate procedures to monitor compliance with company policy and FAR requirements.

(3) *Records.* When the team suspects that the operator is falsifying his records, assistance by regional Air Transportation and Security, Audit and Legal personnel may be necessary.

(a) *A simple cross-checking* of company records, such as checking aircraft logbooks against training records, may reveal discrepancies.

(b) *Another technique successfully used* in the past has been to check flight plan information available to ATC facilities against company records.

b. *Methods of Determination*

(1) *In making a determination as to cause and effects* of deviation from significant policies, certain lead words can be used advantageously (who, what, when, where, why and how). The type of modifiers to be used with these lead words would be dependent upon the information being sought; e.g., HOW was it authorized (in

writing or verbal), WHO authorized the change, etc. The use of such words discourages a "yes" or "no" answer. They tend to draw out the person making the reply and open up avenues for further questions. These fundamental lead words are highly effective analysis tools, when used in a reasonable manner, by a good listener.

(2) *The art of asking the right question* at the right time and of the right person is one of the key attributes of a successful systemsworthiness analysis. This art should be employed continuously by team members during an inspection, since it serves to expose abstract areas, confirms or disproves adherence to the established systems, and provides an insight into the acceptance and applicability of established policies and procedures.

(3) *The verification process* of the Systemsworthiness Analysis Program is also used at the employee level. The techniques employed at this level are the same as those used for the submanagement and supervisory levels. Employees below the supervisory level should not be interviewed about major company policy matters.

(4) *It is apparent, that should the penetration phase* of SWAP be applied to all deviations regardless of their significance, the analysis process would be cumbersome and time-consuming. Therefore, before the penetrating processes are used on a deviation, their probable impact on compliance with FARs and the effectiveness of the overall system should be analyzed by the team. Should the analyses show deviation that would adversely affect the integrity of the system, etc., employ the penetration processes. If, on the other hand, the analyses indicate the deviation is not significant to the overall program, it should be noted by the team for discussion and disposition by the principal inspector.

203.-299. *RESERVED.*

CHAPTER 5. REPORTING

300. *PRELIMINARY REPORT.* A preliminary report will be prepared by the team following completion of the inspection. This data must be clear, concise and a factual record of the teams' findings and discussions. Following the SWAP debriefing of the district office, and subject to any changes, this report becomes part of the SWAP-review report. Only the findings and discussion portion of the SWAP-review report may be transmitted to the operator for his official notification.

301. *REPORT OF SYSTEMSWORTHINESS (RIS: 8000-3).*

a. The Systemsworthiness Analysis Review Report (FAA Form 8000-27) is the official record of the evaluations conducted. This report will be completed by the team leader and distributed and signed by the team leaders' chief.

302. *INSTRUCTIONS FOR PREPARING FAA FORM 8000-27, SYSTEMSWORTHINESS ANALYSIS PROGRAM—REVIEW REPORT.*

(Item numbers and captions below correspond to item number on the form, Appendix 2)

1. *Name of Operator and Location.* Self explanatory.
2. *Type Operation and Applicable FAR.* Indicates whether air carrier, air taxi, repair station, etc., and the FAR under which the operator is certificated and operates.
3. *Inspection.* Indicates if this was a regularly scheduled inspection or special inspection. If special inspection, show who requested this inspection.
4. *Dates Analysis Conducted.* The starting date would be the first day the team conducted business at the operator's facilities. The ending date is the date the team departed the operator's facilities and not the date the form was completed.
5. *Functions Analyzed.* Enter the functions of the operator that were analyzed during this inspection. If functions were satisfactory enter "X" in satisfactory column. If unsatisfactory, enter the number or letter of attachments that outline the unsatisfactory findings, and discussions related to that function.
6. *Alleged FAR Noncompliance.* Enter the function in which an alleged violation of the FAR's is suspected and the applicable FAR. Enter number or letter of attachments which explain alleged violation and supporting evidence.
7. *Analysis Summary.* The analysis summary should convey to the reader the overall state of health of the operator's systems analyzed.
8. *Analysis conducted by.* Enter team member's name—title and offense symbol. AQAFO/SWAP Chief will sign, date and enter distribution.

303. *DISTRIBUTION OF SWAP—REVIEW REPORT*

a. *Original* will be retained by the SWAP team.
b. *One copy* to the Chief, Flight Standards Division/Staff.
c. *One copy* to the district office chief.
d. *One copy* to AFS-300 or AFS-400 only when requested.

304. *CONTENT OF SYSTEMSWORTHINESS ANALYSIS PROGRAM—REVIEW REPORT.*

(a) *Unsatisfactory Finding.* An unsatisfactory finding is a brief factual statement made as the result of examining a group of data relating to a system which defines the defects in the operators' PROGRAM, SYSTEM, OR PROCEDURE. The findings should be broad enough to cover all the examples which support the findings.

(1) Avoid the use of words that imply an all-inclusive situation, such as: "The training programs are inadequate".
(2) Statements such as, "AJAX Airlines is in noncompliance with FAR 121.0" should not be used as a finding.

(b) *Discussion.* This section should contain all significant factors to support the fiinding such as:

(1) Facts bearing on the finding.
(2) The operator's manual procedures.
(3) Requirements of FARs.
(4) Results of interviews with operator personnel.
(5) Reference to other SWAP findings.
(6) Changes in management and supervision.
(7) Interruption of schedules, MRR.
(8) Incident, effect on safety, etc.

All of the data used should reflect sound deductive reasoning in arriving at the stated finding.

Sufficient examples should be listed to document discrepancies found in further support of the findings. They should be listed so that they will be easily identified when reviewed by the operator's personnel from their own records. They should be of such quality to support legal enforcement action if deemed necessary by the principal inspector.

(c) *Conclusion.* Conclusion and recommendations should be on a separate paper and attached to the Systemsworthiness Analysis Program—Review Report.
Formulate conclusions as to the basic causal factors of the discrepancies and the actions best suited to the case. Include effects on safety if appropriate.

(d) *Recommendations.* State (at the option of the team) recommendations designed to correct the

basic causes for deficiencies and discrepancies in the operators' program. These should be based upon appropriate analysis of all causes, proposed cures and alternative courses of action. The consequence of recommendations should be clearly stated.

(e) *Substantiating Data.* Substantiating data collected by the team will be attached to the district office copy of the Systemsworthiness Analysis Program—Review Report for their use in actions with the operator.

305. *NONDISCLOSURE TO PUBLIC.* The contents of the final SWAP reports constitute findings and recommendations made by the FAA in determining the operator's compliance with the FARs and the management systems that control his organization. Accordingly, under the exemption authorized by Section 7.65 of Part 7 of the DOT regulations, copies of SWAP reports or information therein shall not be publicly released or handled indiscriminately. Individual SWAP reports shall be considered as being "For Official Use Only" under the provisions of Order 1600.15D, and shall be marked with information "For Official Use Only" in accordance with Appendix 1, paragraph 6 of the Order. (This classification is for the COMPLETE Final SWAP report and does not prohibit transmitting the Findings and Discussion portion to the operator.)

306. *CONFIRMATION OF OPERATOR'S MEETING.* The district office chief or principal inspector will forward a letter to the operator confirming team findings, verbal agreements and discussions at the post-inspection meeting.

307. *ALLEGED NONCOMPLIANCE DATA.* The report will include sufficient evidence and/or documentation to support any alleged noncompliance. SWAP teams do not process violation reports.
a. *The evidence should be turned over* to the district office for handling.

b. *The district office is the official channel for liaison* with the operator regarding violations disclosed by SWAP. It is essential that a practical method for securing necessary copies of documents be established, by the district office, which is agreeable to the operator and fully understood by all concerned.

(1) *The contact points* within the operator's organization should be clearly identified.

(2) *If a letter of request is required* by the operator prior to releasing documents, or copies of same, such correspondence is to be initiated by the district office.

c. *Manuals/Policies/Instructions.* Manual pages, written policy or instruction which resulted in noncompliance will be IDENTIFIED only. Where such material is not readily available to the district office, copies will be made.

d. *Observed operations.* Actually observed noncompliance operations are to be supported by appropriate reports, i.e., en route, etc., and/or written statement.

e. *Frequent communications* with district office chiefs or principal inspectors regarding inspections are to be maintained. The SWAP team will promptly inform the district office inspectors regarding significant defects and/or major noncompliance areas.

308. *FEEDBACK REGARDING CORRECTIVE ACTION.*

a. *The principal inspector has the responsibility* for providing the operator with the necessary findings of the SWAP team and establishing a reasonable deadline for compliance or corrective actions.

b. *It is expected that the principal inspector* will deal with irregularities in a firm, impartial, and constructive manner, offering assistance or pro-

viding it when requested by the operator. However, responsibility for compliance and for effecting the necessary corrective action in a timely manner rests with the operator. Therefore, the emphasis should be placed on the operator's responsibility to institute and advise in writing the corrective action. The operator should submit a detailed reply that is responsive to each of the identified findings and indicate the systems procedural changes instituted. Negative responses to recommended actions should also be included.

c. *Upon receipt of the written response from the operator,* the principal inspector will determine whether the operator's actions are fully responsive to the findings of the SWAP report. If in the judgement of the principal inspector the operator's actions or proposals are unsatisfactory, he will follow up with the operator to ensure resolution of the problem areas. The principal inspector will conduct such examinations or inspections as necessary to ascertain that the corrective action stated by the operator has, in fact, been accomplished.

309. *REPORT OF CORRECTIVE ACTION (RIS: FS 8000-7).* The feedback will identify each finding in the same order as presented in the SWAP report and will clearly but briefly state the corrective action that is satisfactory to the certificate holding office. This will include:

a. *Where corrective action has been taken.*

b. *Where corrective action is not forthcoming.*

c. *Action underway or planned on open items.*

d. *Initial report of corrective action* will be submitted, normally, within 60 days following receipt of the final SWAP report, by the certificate holding office. A status report will be submitted each 30 days thereafter on all open items following initial report of corrective action.

e. *A close-out report of corrective action* will be submitted when each finding has been satisfactorily closed in the opinion of the certificate holding office.
f. *Routing of report of corrective action.* Two copies to Chief, Flight Standards Division/Staff.
g. *The Chief, Flight Standards Division will establish* a follow-up system to insure that appropriate and timely actions are taken on reported system findings, and that these actions are evaluated by the regional staff.

310. *RETENTION OF SWAP REPORTS* is to be in accordance with instructions in the FAA Records Management Handbook, 1350.14.

311. *AVAILABILITY OF FORM.* FAA Form 8000-27, Systemsworthiness Analysis Program—Review Report (RIS: FS 8000-3), will be available on or about July 19, 1974 (an initial distribution will be made to Aeronautical Quality Assurance Field Offices (SWAP). Forms will be stocked in the FAA Depot and will be available through normal supply channels, FSN 0052-840-2000, unit of issue—sheet.

312.-399. *RESERVED.*

CHAPTER 6. SYSTEMSWORTHINESS ANALYSIS PROGRAM—MAINTENANCE/AVIONICS

SECTION 1. FAR 121/123/127 OPERATORS AND ASSOCIATED CERTIFICATED SERVICES

400. *THE FUNCTIONS TO BE ANALYZED.* For these operators the following functions will be analyzed:

a. Training.
b. Quality Control.
c. Inspection.
d. Production Control.
e. Product Improvement/Modification.
f. Maintenance Performance.
g. Performance Analysis.

401. *ANALYSIS.* A SWAP team analysis of an air carrier, travel club, or commercial operator should not require a routine SWAP team visit to the certificated facilities with which the carrier contracts unless that facility functions as the physical location of the carrier's main maintenance base. During the analysis, a nonroutine visit to a certificated contract facility may occasionally be required to further analyze a specific problem at hand. Such visits should be coordinated with the facility's certificate holding office.

402.-429. *RESERVED.*

SECTION 2. SYSTEMSWORTHINESS ANALYSIS PROGRAM—MAINTENANCE/AVIONICS—GENERAL AVIATION

430. *AIR TAXI OPERATORS AND COMMERCIAL OPERATORS OF SMALL AIRCRAFT (FAR 135).* The functions to be analyzed for these operators are as follows:

a. Policies and procedures.
b. Quality control.
c. Facilities and equipment.
d. Personnel and training.
e. Maintenance performance.

431. *AIR TAXI OPERATORS OF LARGE AIRCRAFT.* The instructions and guidance material contained in Section 1 of this chapter will apply to Air Taxi/Commercial Operators of large aircraft certificated under the provisions of FAR 135.2.

432. *REPAIR STATIONS (FAR 145).* The functions to be analyzed for these operators are as follows:

a. The certificate and ratings.
b. Quality control.
c. Maintenance performance.
d. Facilities and equipment.
e. Personnel and training.

433. *MAINTENANCE TECHNICIAN SCHOOLS (FAR 147).* The functions to be analyzed for these operators are as follows:

a. The curriculum.
b. Equipment and facilities (classrooms and shops).
c. Instructor qualifications.
d. Student instructor ratio.
e. Instructional aids.

434. *PILOT TRAINING SCHOOLS (FAR 141).* The functions to be analyzed for these operators are as follows:

a. Policies and procedures.
b. Quality Control.
c. Facilities and equipment.
d. Personnel and training.

435.-499. *RESERVED.*

CHAPTER 7. SYSTEMSWORTHINESS ANALYSIS PROGRAM—OPERATIONS

500. *FAR 121/123/127/135.2 OPERATORS AND ASSOCIATED CERTIFICATED FACILITIES.* The functions to be analyzed for these operators are as follows:

a. Records and Crew Scheduling.
b. Facilities.
c. Flight Operations Policies and Procedures.
d. Ground Station Personnel Training.
e. Handling of hazardous material.

501. *GENERAL AVIATION OPERATIONS.*

a. *Air Taxi/Commercial Operators.* The functions to be analyzed for those operators are as follows:

1. Pilot training program.
2. Flight attendant training program.
3. Flight operations polices and procedures.
4. Handling of hazardous material.

b. *Pilot Training School.* The functions to be analyzed for these operators are as follows:

1. School management.
2. Quality of instruction.
3. Personnel and training.
4. Aircraft and equipment.

502.-559. *RESERVED.*

GLOSSARY OF TERMS

A. *SWAP COMMON SYSTEMS*

(1) *SYSTEM*—An array of related major subsystems and elements designed to work in unison and harmony towards a predetermined objective and ultimate goal. Seven constant components of all good systems are policy formulation, organization, standards of performance, individual analysis, help and information needed, sources of help and information needed, and time schedules. An additional component is control.

(2) *SYSTEMSWORTHINESS ANALYSIS PROGRAM (SWAP)*—A process of breaking a system down into its subsystems and elements and applying the seven constant components for the purpose of assessing and reporting the worth of each component as it affects the subsystem and subsequently the entire system.

(3) *SUBSYSTEM*—A major component of an entire system such as a procedure. A subpart of a system that is an integral part of a larger system.

(4) *ELEMENT OF A SYSTEM OR SUBSYSTEM*—An essential resource such as money, manpower, machines, equipment, tools, space, material supplies, training, safety precautions, utilities, morale or other items of need essential to the suitable functioning of a system or subsystem.

(5) *ANALYSIS*—A series of processes or techniques used in breaking a system down into its components and elements to aid in the process of measuring the worth and value of each com-

ponent and element comprising the system. Analysis is a penetrating inquiry into the nature of things as to effect and cause relationships to aid the decision maker in making a choice between possible alternatives and consequences.

B. *SEVEN CONSTANT COMPONENTS OF ALL GOOD SYSTEMS*

(1) *POLICY FORMULATION*—Statements of intent.

(a) *GENERAL POLICIES*—Statements of ultimate purpose.

(b) *MAJOR POLICIES*—Statements of Intermediate objectives, quantifiable, qualitative, and timeliness.

(c) *DEPARTMENTAL POLICIES*—Methods and procedures for achieving objective.

(2) *ORGANIZING*—Process of dividing the work to be done to reach the objective sought. Assigning and limiting responsibility and authority, establishing working relationships channels for coordination and cooperation.

(3) *STANDARDS OF PERFORMANCE*—Results expected from organizational elements, persons or items. Reasonable and attainable results expected from persons, items or things.

(4) *INDIVIDUAL ANALYSIS*—Profiling position requirements, profiling of man specification, matching the two profiles and determining a course of action.

(5) *HELP AND INFORMATION NEEDED*—Tools, machines, equipment, supplies, etc., and training individuals in their use, guidelines, directives, and the like.

(6) *SOURCES OF HELP AND INFORMATION*—Policy, organization and procedure manuals. Specifications, blue prints, regulations, laws, reports, publications, texts, etc., and training centers.

(7) *TIME SCHEDULES*—Target dates, deadlines, time controls compatible with quantity and quality desired.

C. *DEFINITIONS.*

PRINCIPAL—A fundamental truth, FAR, a rule of thumb, guiding belief, a common practice a conventional way.

PROCESS CHART—A method for breaking a compound procedure down into its sequential steps. A detailed record of the successive steps in an activity or process. It sets down in chronological order everything that is done.

BEFORE STUDY—A process chart showing a process or procedure as it is currently being done.

AFTER STUDY—A process chart showing a proposal for modifying a current process.

SIGNIFICANT—Having possible effect on safety or compliance with applicable rules.

SURVEILLANCE—A continuing and intermittent inspection of a system or combination of systems and procedures. A reconnaissance survey, a close watch over events and trends to insure compliance with norm, regulation or standard practice(s).

APPRAISAL—An analysis of the worth or values of a system, item or thing. A surfacing of defects, a penetrating comparison of what-is with what-ought-to-be.

STANDARD—A device for measuring something, a result expected, a norm established by common practice, a description of what ought to be, a reasonably attainable objective or goal, a measure of quantity, quality and timeliness.

PROCEDURE—A process, routine, or prescribed sequence of steps or tasks to produce a desired result.

INSPECTION—A purposeful observation of an event, a document item or thing to closely examine quantity, quality or timeliness, compliance with reg-

ulation, norm, good standard practice, and safety. A close look at the performance of people and things.

EFFICIENCY PRINCIPLES IN ANALYSIS—An analytical technique using proven fundamental truths to aid the analyst or decision makers isolate defective areas, and provide clues for recommending choices from among proven alternative courses of action.

VERTICAL ANALYSIS—An analytical technique designed to aid the analyst or decision maker organize his thinking, diagnose a situation, reduce general situations to specific problems, eliminate triva, clearly associate effect with cause and relate cure to cause, avoid treating symptoms rather than cause, and prepare preliminary reports.

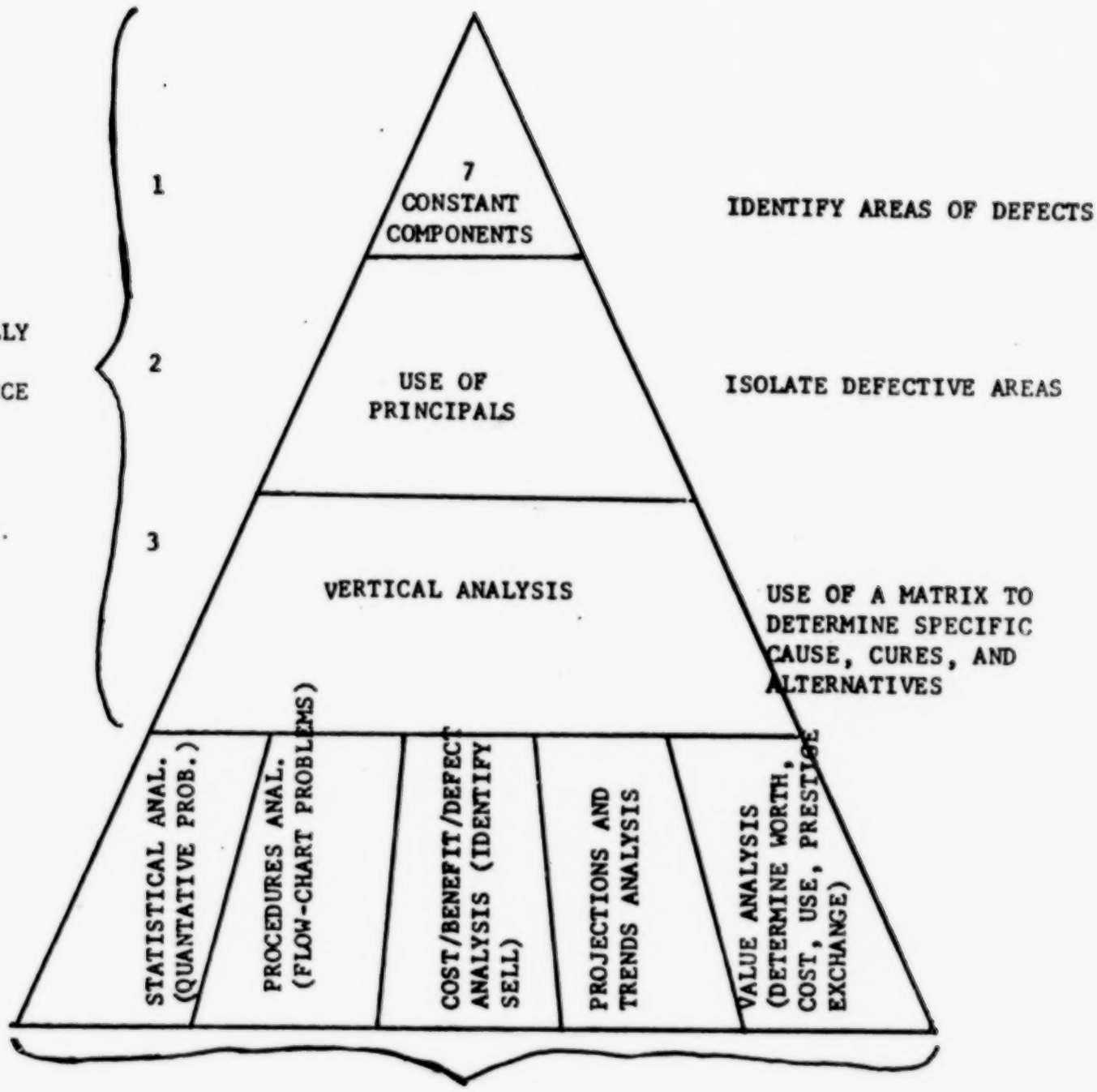
STATISTICAL ANALYSIS—An analytical technique designed to aid an analyst or decision maker analyze quantitative data past, current and future; draw conclusions and inferences, project trends, and choose alternatives based on quantitative values.

COST/BENEFIT/EFFECTIVENESS ANALYSIS—An analytical technique designed to aid the decision maker, analyze, compare, and weight the consequences of alternative courses of action against each other. A technique to aid in the process of persuasion.

VALUE ANALYSIS—An analytical technique designed to aid the decision maker make a best choice of alternative intangible values for improved effectiveness of resources.

*

FIGURE 1. HOW TO APPROACH SYSTEMS ANALYSIS



*

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D. *NORMAL PROCESS OF SYSTEMS INSPECTION AND ANALYSIS (FIGURE 1)*

1. Observe, using the 7 constant components to identify apparent problem areas.
2. Observe, using the principles to break the problem areas down further.
3. Observe, using the vertical analysis technique to further reduce the problem areas to more specific defects, causes and cures.
4. As determined by step 3, select the most suitable analytical or procedural technique to pinpoint the specific problem.
5. As determined by steps 3 and 4, use cost/benefit/effectiveness analysis to choose between alternatives available which reflect objective data.
6. As determined by 3, 4 and 5 use value analysis on subjective data.

All or any of the techniques will aid in selling the teams' findings.

* APPENDIX 2. SAMPLE FAA FORM 8000-27, SYSTEMSWORTHINESS ANALYSIS PROGRAM - REVIEW REPORT

SYSTEMSWORTHINESS ANALYSIS PROGRAM – REVIEW REPORT | RIS: FS 8000-3

1. NAME OF OPERATOR & LOCATION
XYZ Airlines, Incorporated
Oneida County Airport
Oriskany, N.Y. 00000

2. A. TYPE OPERATION
Scheduled Air Carrier

B. APPLICABLE FAR
121

3. INSPECTION
[X] REGULAR
[ ] SPECIAL
REQUESTED BY

4. DATES ANALYSIS CONDUCTED
A. FROM 5/27/74
B. TO 6/12/74

5. FUNCTIONS ANALYZED

	FUNCTIONS (List functions analyzed)	RESULTS: SATISFACTORY ("X" if applicable)	RESULTS: UNSATISFACTORY (List serial attachment no(s).)
a	Quality Assurance		1, 3, 7, 9
b	Personnel and Training	X	
c	Equipment and Facilities		2, 4, 6
d			
e			
f			
g			
h			
i			
j			

6. ALLEGED FAR NONCOMPLIANCE

	FUNCTION	FAR	(List serial attachment number(s) plus evidence)
a	Airworthiness Directives	39.3	10, 11
b			
c			
d			
e			
f			

REPORT DISTRIBUTION	ORIGINAL SWAP TEAM	1 Copy Chief, FS Div./Staff [X]	1 Copy Chief, Dist. Ofc. [X]	1 Copy A/C Maint. Rpt. AFS-300 [ ]	1 Copy When Requested to WASH HQ [ ]	[ ] G/A Maint. Rpt. [ ] G/A Ops. Rpt. [ ] A/C Ops. Rpt.

FAA Form 8000–27 (5-74)

FOR OFFICIAL USE ONLY
(Public availability to be determined under 5 U.S.C. 552)

Typical Execution of Front of FAA Form 8000-27 (5-74), Systemsworthiness Analysis Program - Review Report *

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*

7. ANALYSIS SUMMARY
(BRIEF SUMMARY OF OPERATOR'S STATUS)

8. ANALYSIS CONDUCTED BY		
TYPED NAME & SIGNATURE	TITLE	OFFICE SYMBOL
R. Schiller	Team Leader	AEA-260
T. Smith	Air Carrier Maint. Specialist	AEA-260
J. Jones	Air Carrier Maint. Specialist	AEA-260

AQAFO/SWAP CHIEF		
TYPED NAME & SIGNATURE	TITLE & ORGANIZATION	DATE
W. Russell	Chief, Aeronautical Quality Assurance Field Office	6/17/74

Typical Execution of Back of FAA Form 8000-27, Systemsworthiness Analysis Program - Review Report *

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[CHANGE] [8000.3C CHG 4]

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

10/15/74
Cancellation
Date: after
filing

SUBJ: SYSTEMSWORTHINESS ANALYSIS PROGRAM

1. *PURPOSE.* This change provides information designed to prevent duplication of effort by SWAP and QASAR teams.

2. *EXPLANATION.* This change eliminates duplication of inspection effort, thus saving valuable time and money.

PAGE CONTROL CHART

Remove pages	dated	Insert pages	dated
iii	7/24/74	iii	10/15/74
iv	7/24/74	iv	7/24/74
103 and 104 (thru 150)	12/11/73	103	12/11/73
		104 (thru 150)	10/15/74

/s/ C. R. Melugin, Jr.
C. R. MELUGIN, JR.
Acting Director, Flight Standards Service

Distribution: WRCMFS-3; FFS-1, 2, 3, 5, 7, 8 (wide); FIA-O (minimum); AAC-955 (80 copies)

Initiated By: AFS-340

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h. Any other factors that could adversely affect the operators' performance or be of assistance to the teams.

i. That portion of the district office program SWAP will accomplish.

104. *OTHER BRIEFINGS.* The inspection team will have free access to manuals, correspondence, and records pertaining to the operator, and any other appropriate data maintained by district offices. All material and data pertinent to the inspection will be studied by the team to acquaint them with the operator's policies, instructions and procedures. It is essential that the team has a good working knowledge of the operator's management policies and procedures applicable to the area to be investigated before they meet with the operator. In this manner, the team will be better equipped to discuss intelligently the policies and procedures used by the operator in the direction and control of his enterprise.

105. *INITIAL MEETING WITH THE OPERATORS.*

a. *The district office chief or principal inspector shall arrange* for and chair the initial meeting of the inspection team and the operator. He will explain the purpose and scope of the inspection. In cases where a problem area is suspected to exist, it should be frankly discussed with the operator. This straight-forward approach will help to foster a feeling of mutual trust and respect that is beneficial, if not essential, to the analysis. At this time, the operator will be advised that he will be informed of the team's findings at a meeting to be arranged by the district office at the conclusion of the inspection. The operator should be invited to stipulate any special areas that he would like the team to examine.

b. *At the initial meeting of SWAP and the operator,* the team leader will furnish the operator a written itinerary of the SWAP team including dates that facilities, subcontractors, suppliers, etc., will be visited. The operator should be advised that it will be his responsibility to advise the areas of the intended visits. This procedure will not apply to en routes, pilot proficiency checks or airman certification functions.

c. *The operator should also* be advised that experience has shown that rumors relating to FAA findings while the inspection is in progress are not unusual and should be disregarded. Such rumors usually stem from the searching nature of the questions posed by members of the team. Team members will normally not discuss findings with the operator's personnel during the onsite inspection.

106. *DISTRICT OFFICE CHIEF OR PRINCIPAL INSPECTOR DEBRIEFING.* The Systemsworthiness Analysis team will debrief the district office at the conclusion of their inspection. At this meeting all findings will be discussed prior to meeting with the operator, thereby preparing the agency spokesman for the post-inspection meeting with the operator. At this time, the team will also furnish the district office with copies of appropriate FAA forms covering that portion of the district office work program accomplished by the team.

107. *POST-INSPECTION MEETING WITH THE OPERATOR.* The district office chief or the principal inspector shall arrange for, and serve as agency spokesman in the post-inspection meeting with the operator. All findings discussed at the meeting must be fully supported by facts acquired by the team. However, the operator should be given ample opportunity to present additional facts which he feels mitigate defects found by the inspection team.

108. *ELIMINATING DUPLICATION OF EFFORT BY SWAP AND QASAR TEAMS.* When a manufacturer holds a repair station certificate, with limited rating for manufacturers (MMF), the SWAP unit

will not schedule an inspection until the QASAR unit has been consulted. If it is learned that considerable activity has transpired under the terms of the repair station certificate, SWAP will consider the previous findings of QASAR and make a decision on conducting a SWAP inspection of the repair station activity only. For the most part, only one inspection will be required (QASAR). There will be exceptions where a SWAP inspection will be conducted if considerable activity is continuing under the repair station certificate.

109-199. *RESERVED.*

SUPREME COURT OF THE UNITED STATES

No. 74-450

ALEXANDER P. BUTTERFIELD, Administrator,
Federal Aviation Administration, et al., PETITIONERS

v.

REUBEN B. ROBERTSON, III, et al.

ORDER ALLOWING CERTIORARI—Filed December 16, 1974.

The petition herein for a writ of certiorari to the United States Court of Appeals for the District of Columbia Circuit is granted.

☆ U. S. GOVERNMENT PRINTING OFFICE: 1975 567221 05